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101ST CONGRESS *2d Session*	SENATE	REPORT 101-355

TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING ACT OF 1990

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

together with

ADDITIONAL AND MINORITY VIEWS

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1981

JUNE 29, 1990.—Ordered to be printed

Filed under authority of the order of the Senate of June 29 (legislative day, June 11), 1990

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101ST CONGRESS
2d Session

SENATE

REPORT
101-355

TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING COMPETITION ACT OF 1990

JUNE 29, 1990.—Ordered to be printed

Filed under the authority of the order of the Senate of June 29 (legislative day, June 11), 1990

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

together with

ADDITIONAL AND MINORITY VIEWS

[To accompany S. 1981]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1981) to permit the Bell Telephone Companies to conduct research on, design, and manufacture telecommunications equipment, and for other purposes, having considered the same, reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill as amended do pass.

PURPOSE OF BILL

The purpose of the bill, S. 1981, as reported, is to permit the Bell Telephone Companies to enter the businesses of manufacturing telecommunications and customer premises telephone equipment and providing telecommunications equipment. The bill is intended to promote United States competitiveness in global telecommunications markets, stimulate employment opportunities in the United States communications equipment industry, and preserve United States leadership in developing innovative new telecommunications technologies. The bill includes several regulatory measures con-

cerning the Bell Companies' participation in these new businesses. These provisions are intended to protect against the possibility that the Bell Companies might engage in anticompetitive conduct.

Background and Needs

I. Origin and History of the Manufacturing Restriction

A. Events Leading to the AT&T Consent Decree

1. History of concern over AT&T's monopoly.

For most of this century, and most of AT&T's history, AT&T was both a horizontally- and vertically-integrated monopoly. AT&T Long Lines provided the only long distance telephone service throughout the country; the 22 Bell Operating Companies (BOCs) that AT&T owned provided the only local telephone service to 80 percent of the Nation's population; AT&T's Western Electric subsidiary manufactured almost all the equipment needed for the operation of the telephone network; and AT&T's Bell Laboratories (Bell Labs) conducted the most extensive research involving high technologies and telecommunications of any research center in the world. AT&T was not just the world's largest provider of telephone service; it was also the largest corporation in the world.

The strength of AT&T's monopoly, and AT&T's attempts to extend this monopoly into other businesses, were, until recently, a constant concern of United States policy-makers. The government has made several attempts to control AT&T through antitrust actions and by regulation. In 1913, the Department of Justice (DOJ) reached an out-of-court settlement agreement with AT&T that required it to stop purchasing competing telephone companies and to allow them to interconnect with the AT&T network. This agreement also required AT&T to sell its shares in Western Union, the monopoly provider of telegraph service in the country, which AT&T had recently purchased.[1] In the 1920's, the government pressured AT&T to relinquish its ownership of movie theaters, again based on antitrust law principles. In 1934, Congress passed the Communications Act of 1934 (the Act) and created the Federal Communications Commission (FCC) to regulate AT&T's provision of telephone service on an ongoing basis.[2] AT&T, in part, welcomed this legislation, hoping that it would forestall any future antitrust actions against it.

2. The antitrust case of 1949.

In 1949, the Federal Government again filed an antitrust action against AT&T, alleging that AT&T was abusing its control over the telephone network to discriminate against competitive manufacturers of telephone equipment.[3] The government contended that AT&T purchased all its equipment needs from its Western Electric subsidiary regardless of the equipment price or quality. Since AT&T accounted for as much as 75 percent of the total market for

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[1] *United States v. AT&T*, No. 6082, U.S. Dist. Ct., Dist. of Oregon, *Original Petition*, July 24, 1913; Nathan C. Kingsbury to James C. McReynolds, December 19, 1913; *United States v. AT&T*, No. 6082 (D. Or. 1914) (Decree).

[2] 47 U.S.C. 151, et seq.

[3] *United States v. Western Electric*, No. 17-49 (D.N.J. 1949).

telephone equipment, competing manufacturers had little opportunity to find a market for their products. The suit thus sought to separate Western Electric from AT&T's telephone services business and to bar AT&T from engaging in any future telephone manufacturing activity. That suit was settled in 1956. The agreement required no structural change in AT&T's operations, but it did bar AT&T from participating in the emerging computer and data processing businesses.[4]

3. The growth of competition and the origins of the 1974 antitrust case.

Beginning in the 1960's and continuing into the 1970's, the FCC and the courts slowly but deliberately introduced greater competition to AT&T's monopoly businesses. In 1968, over AT&T's objection, the FCC ordered AT&T to permit customers to attach non-Bell telephone equipment to the telephone network.[5] Three years later, the FCC also issued an order permitting "specialized" common carriers, such as MCI, to compete with AT&T in the provision of certain long distance services.[6] The courts subsequently upheld these decisions and further recognized the right of long distance companies to compete against the full range of AT&T's long distance services.[7]

AT&T's new equipment and long distance competitors, however, soon found that regulatory approval was not enough to overcome AT&T's market power. The competitors complained that AT&T was using its control over the monopoly of local telephone carriers to discriminate against them and prevent them from gaining a foothold in their markets.[8] For instance, the long distance competitors alleged that the BOCs would not give them the same quality of connections to the local telephone company, and thus to the end user, that they gave to AT&T. The equipment manufacturers alleged that AT&T would not purchase their equipment. The DOJ found merit in these complaints and filed another antitrust suit against AT&T in 1974, alleging harm to both the long distance and manufacturing markets.

4. Rationale for the antitrust action regarding AT&T's manufacturing activities.

With regard to the telephone equipment manufacturing market, the DOJ alleged that AT&T, through its ownership of the BOCs, engaged in three unlawful activities: 1) AT&T and the BOCs pur-

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[4] *United States v. Western Electric Co.*, CA No. 17-49 *Final Judgment*, 1956 Trade Cas. 68,246 (D.N.J. 1956).

[5] FCC Docket 16942, adopted June 26, 1968, 13 FCC 2d 420 ("Carterphone" decision).

[6] *First Report and Order*, FCC Docket 18920, "Specialized Common Carriers," June 3, 1971, 29 FCC 2d 870, *aff'd sub nom. Wash. Util. & Trans. Comm'n v. FCC*, 513 F.2d 1142 (9th Cir. 1975), *cert. denied*, 423 U.S. 836 (1975) (Specialized Common Carrier decision).

[7] *MCI v. FCC*, No. 75–1635, 561 F.2d 365 (D.C. Cir.), *cert. denied*, 434 U.S. 1040 (1978) ("Execunet" decision).

[8] To reach a customer, also known as an "end user", all telecommunications service providers, including long distance companies and information service companies, must almost always connect with the local telephone network. While there are a few companies offering competitive "bypass" services to business customers in some major cities, it is virtually impossible to duplicate the millions of miles of copper cable strung beneath the street and on telephone poles controlled by the telephone companies. The competitors argued that, without this alternative, the BOCs were able to exercise "bottleneck" control over the services and rates of long distance companies.

chased all of their telephone equipment for their long distance and local networks from Western Electric, regardless of the relative cost or quality of that equipment;[9] 2) AT&T subsidized its equipment manufacturing activities with revenues earned from its telephone service businesses, thereby forcing telephone service customers to pay higher telephone rates than necessary and allowing Western Electric to sell equipment below its actual costs of manufacturing that equipment; and 3) AT&T manipulated the design of its telephone network so that only equipment manufactured by Western Electric would be compatible with the telephone network.

5. The court proceedings.

After several years of pre-trial procedures, DOJ began presenting its case in 1981. Later that year, Judge Harold Greene ruled, in a detailed order, that DOJ had presented sufficient evidence of antitrust activity to satisfy its initial burden of proof. The Judge thus denied AT&T's request for a dismissal of the case and ordered AT&T to present its defense. About three weeks before the trial was to conclude, however, DOJ and AT&T agreed to settle the case. After their agreement was submitted to the court for review, Judge Greene accepted the decree, with several alterations, on August 24, 1982.

6. The Consent Decree.

The settlement agreement is today known as the "Modification of Final Judgment" (MFJ) or the AT&T "Consent Decree".[10] The theory behind the settlement was that it was necessary to separate AT&T's competitive businesses (long distance and manufacturing) from its monopoly services (local exchange telephone service). The agreement required AT&T to spin off the twenty-two BOCs into separate companies. AT&T was permitted to retain its long distance operations, its Western Electric manufacturing subsidiary, and its Bell Labs research facilities. In exchange for relinquishing the BOCs, AT&T received DOJ's commitment to seek the lifting of the restriction in the 1956 decree which barred AT&T from participating in the computer and data processing markets.

DOJ remained concerned, however, that the BOCs would retain their dominance over local telephone service even after their divestiture from AT&T. The parties thus agreed, and the court accepted, that the BOCs would be bound by several restrictions and obligations to protect against future antitrust abuse. Among these provisions, for instance, was a requirement that the BOCs provide "equal access" to all long distance carriers. The decree directed the BOCs to make available to other, competitive long distance companies the same quality of access to the customer that they provided to AT&T.

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[9] Since AT&T purchased up to 75 percent of the telephone equipment in the country, there was little opportunity for competing manufacturers to sell their equipment elsewhere if AT&T was not a buyer.

[10] The "Modification of Final Judgment" modifies the Final Judgment that concluded the government's earlier antitrust action begun in 1949 and settled in 1956. *United States v. Western Electric Company*, 552 F.Supp. 131 (D.D.C. 1982), *aff'd sub nom., Maryland v. United States*, 460 U.S. 1001 (1983).

The agreement submitted by AT&T and DOJ would have barred the BOCs permanently from providing information services, long distance telephone services, and telephone equipment manufacturing and provision. Another part of the agreement further bound the BOCs to providing only local telephone exchange services to prevent the BOCs from leveraging their dominance over local telephone service to gain an unfair advantage over participants in competitive markets.

Pursuant to the Tunney Act,[11] Judge Greene took extensive comment on the proposed settlement agreement to determine whether it was supported by the evidence introduced at trial and consistent with the public interest. After his review, Judge Greene suggested several changes. He permitted the BOCs to publish and distribute "Yellow Pages" directories, and he permitted the BOCs to distribute (but not manufacture) "customer premises equipment."[12] He also loosened the line of business restrictions. He allowed the BOCs to apply for waivers of the restrictions and accepted the DOJ's commitment to report to the Court every three years after the decree on the continuing need for these restrictions. The Judge also established a standard, discussed in more detail below, for determining whether the restrictions continue to be warranted.[13] Finally, the Judge retained jurisdiction over the decree to consider waivers to the restrictions and to the decree in general.

B. Enforcement and Interpretations of the Decree

1. The Plan of Reorganization

The Consent Decree, accepted by the court in August 1982 provided that the divestiture by AT&T of its Bell Companies would take effect on January 1, 1984. To comply with this deadline, AT&T submitted to DOJ and then to the court a detailed "Plan of Reorganization" which set forth its plan for dividing its assets between itself and the BOCs. Since the vast majority of the investment in the Bell System consisted of wires and switches used for local service, AT&T lost almost three-quarters of its assets ($112 million out of a $155 billion total).

The twenty-two Bell Companies were organized into seven Regional Bell Operating Companies (RBOCs) or Regional Holding Companies (RHCs), each of relatively equal size in terms of assets and revenues, but not in terms of geographic area.[14] Each of the

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[11] Antitrust Procedures and Penalties Act, 15 U.S.C. 16(b)-(f) (hereinafter referred to as the Tunney Act).

[12] The decree defines two types of telephone equipment: "telecommunications equipment" refers to equipment used in the telephone network and includes central office switches and transmission equipment such as fiber optic cable; "customer premises equipment" (or "CPE") refers to equipment used at the customer's location and includes telephones and telephone switches installed by businesses on their premises. For purposes of convenience, telecommunications equipment and CPE will be collectively referred to as "communications equipment".

[13] This standard essentially permits the BOCs to enter the three prohibited lines of business when there is significant competition to their local exchange services or when there are other reasons for believing that the BOCs could not harm competition in the market they seek to enter.

[14] The seven RBOCs, and the BOCs they control, are as follows: NYNEX Corp. (including New England Telephone Company and the New York Telephone Company); Bell Atlantic (including New Jersey Bell Telephone Company; the Bell Telephone Company of Pennsylvania; the Diamond State Telephone Company; and the Chesapeake and Potomac Telephone Companies of Washington, D.C., Virginia, Maryland, and West Virginia); BellSouth Corp. (including Southern

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RBOCs is roughly equal in size to the largest independent telephone company, the General Telephone and Electric Company (GTE).

2. The waiver process.

Shortly after the divestiture on Janury 1, 1984, several BOCs filed motions requesting waivers of the line of business restrictions. DOJ noted that the waiver applicants did not attempt to demonstrate that the relevant economic conditions had significantly changed since the divestiture, and the court denied the motions. The court indicated that it would not consider waivers by the BOCs to enter the long distance, information services and manufacturing markets unless there was evidence of significantly diminished competitive risks. Judge Greene indicated that waivers to enter other lines of business would generally be easy to obtain, as long as the total revenues from these competitive lines of business did not exceed 10 percent of the RBOCs' total revenues.

Judge Greene also required that waiver requests be submitted first to DOJ for review, that DOJ make a recommendation on those requests, and that they then be forwarded to the court. As of January 27, 1987, the BOCs had submitted approximately 160 waivers to DOJ for review before being submitted to the court. One hundred and three of these had been decided, 30 were pending with DOJ, and 13 were pending with the court.[15] The court noted at the time that the number of waiver applications was greater than the court initially expected.[16]

3. The First Triennial Review.

On February 2, 1987, three years after the divestiture, DOJ submitted its report and recommendations to the court concerning the continued need for the line of business restrictions. In a fundamental shift from its earlier position, DOJ recommended complete removal of the restrictions on information services, manufacturing, and on the BOCs' entry into other, non-telecommunications lines of business. DOJ further recommended that the long distance restrictions be substantially modified to permit each BOC to provide long distance service outside of the region in which it provides local telephone service.[17] DOJ also submitted a lengthy study of the telecommunications marketplace prepared under contract by Dr. Peter

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Bell Telephone and Telegraph Co. and South Central Bell Telephone Co.); Ameritech Corp. (including Ohio Bell Telephone Co.; Michigan Bell Telephone Co.; Indiana Bell Telephone Co.; Illinois Bell Telephone Co.; and Wisconsin Telephone Co.); US West Corp. (including Northwestern Bell Telephone Co.; the Mountain States Telephone and Telegraph Co.; and Pacific Northwest Bell Telephone Co.); Pacific Telesis Corp. (including Pacific Bell Telephone and Telegraph Co. and Bell Telephone Company of Nevada); and Southwestern Bell (including the Southwestern Bell Telephone Co.)

[15] As of that date, only one waiver request supported by DOJ had been denied. "Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment", Civil Action No. 82-0192, p. 25.

[16] *See, United States* v. *Western Elec. Co.*, 592 F.Supp. 846, 858 (D.D.C. 1984), *appeal dismissed*, 777 F.2d 23 (D.C. Cir. 1985).

[17] DOJ later altered this recommendation by suggesting that the restriction on long distance should be retained but that the court should entertain requests for waivers of the restriction as soon as state and local regulations limiting competition in the local exchange market were lifted.

Huber (known as the "Huber Report") to support its recommendations.

i. DOJ's Views on Manufacturing

Regarding the manufacturing restriction,[18] DOJ argued that several changes had occurred since 1982 that made it unlikely that the BOCs could harm the manufacturing market. The most significant change, in DOJ's view, was the divestiture itself. One vertically-integrated monopoly had been replaced by eight companies (the seven RBOCs and AT&T). Whereas the former Bell System purchased about 80 percent of the central office switching and network transmission equipment, "no one BOC accounts for more than a relatively small percentage of the purchases in any equipment market." [19] DOJ further noted that the markets for communications equipment were competitive, with both several strong firms and numerous "fringe" firms, including several large, vertically-integrated foreign firms.

DOJ found that these markets changes were accompanied by regulatory changes that reduced the ability of any BOC to engage in anticompetitive activity. Primary among these were the FCC's adoption of standards governing the interconnection of terminal equipment and rules governing the disclosure of network design information. In addition, private national and international interconnection standards also had been promulgated. Finally, the FCC had adopted new cost allocation rules designed to prevent cross-subsidization. Finally, DOJ pointed out that the BOCs would remain subject to the antitrust laws even after the manufacturing restriction was lifted and that it would prohibit any anticompetitive attempt to recreate the old Bell System.

DOJ further argued that continuing the manufacturing restriction could impose direct costs on society. The BOCs could lose the benefit of potential efficiencies between the provision of telephone service and manufacturing, such as the sharing of joint or common costs, especially joint research costs. DOJ also noted that the "gray areas" between "manufacturing" and "providing" customer premises equipment, between permitted network design and the manufacturing of telecommunications equipment used in the network, and the ambiguities in the definition of the term "manufacturing" could all require the expenditure of considerable litigation and judicial resources for little competitive gain.

ii. The District Court's Opinion

After taking extensive comment on DOJ's recommendations, the court granted the request to remove the restriction on non-telecommunications businesses and modified the restriction on information

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[18] From this point on, unless otherwise noted, the term "manufacturing restriction" will be used to describe the restriction contained in the AT&T Consent Decree that bars the BOCs from manufacturing telecommunications equipment and customer premises equipment and from providing telecommunications equipment.

[19] DOJ Recommendations, p. 161. DOJ noted that Dr. Huber had found that "no single BOC's 'purchasing decisions * * * can have much impact on competition in the market as a whole.'" DOJ Recommendations, p. 162, note 318, quoting Hubert, *The Geodesic Network*, at 1.16.

services. But the court made no change in the long distance of manufacturing restrictions.[20]

The court began its analysis by noting that section VIII(C) of the Consent Decree provides that the restrictions may be removed only if the BOCs demonstrate that "there is no substantial possibility that they could use their monopoly powers to impede competition in the markets they seek to enter". The court explained that this standard imposes a burden on the BOCs to demonstrate that events have changed to such a degree that the restrictions are no longer warranted. The court found the three changes claimed by the BOCs were not substantiated. First, it found that the BOCs still controlled a monopoly over local telephone service. Second, it found that the divestiture was not a relevant change because the divestiture was anticipated by the decree and that the BOCs collectively were about equal to the old Bell System in terms of their monopoly power. Third, it found that FCC regulation was actually less stringent than it was prior to the divestiture due to the FCC's loss of staff and change in regulatory philosophy.

Regarding manufacturing, the court found that no changes had occurred in the previous three years that warranted removal of the restriction. It found:

> (1) the Regional Companies still have an ironclad hold on the local exchanges; (2) collectively they account for the purchases of what may be estimated at seventy percent of the national output of telecommunications equipment, only slightly less than the share of the pre-divestiture Bell System; (3) if the restriction were lifted, the Regional Companies may be expected to act as did the Bell System; they would buy all, or almost all, of their equipment requirements from their own manufacturing units rather than from outsiders; (4) no measures, regulatory or otherwise, are available effectively to counteract such activities; and (5) in short order following removal of the restriction, a return to the monopolistic, anticompetitive character of the telecommunications equipment market would be likely, if not inevitable.[21]

iii. The Circuit Court of Appeals Decision

The BOCs appealed this decision of the District Court. On appeal, the United States Court of Appeals for the District of Columbia Circuit upheld the District Court's finding that the BOCs had not carried their burden of proof regarding the need to lift the manufacturing restriction and thus affirmed the District Court's decision. The Circuit Court, however, clarified the section VIII(C) standard and the District Court's responsibilities under that standard.[22]

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[20] 673 F.Supp. 525 (D.D.C. 1987).

[21] 673 F.Supp. 525, 573 (D.D.C. 1987).

[22] *United States* v. *Western Electric*, Slip Opinion, No. 87-5388 (April 3, 1990). The Circuit Court also upheld the District Court's refusal to lift the ban on long distance services but remanded the District Court's decision not to lift the restriction on information services. The Circuit Court held that the District Court had applied the wrong standard to review the informa-

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Specifically, the Circuit Court found that the Judge erred in determining that the BOCs were required to show an unforeseen change in circumstances to satisfy the section VIII(C) standard. The Circuit Court said that the divestiture and the practices of the BOCs were significant factors that Judge Greene could have considered in reviewing the restrictions. Also, the Circuit Court expressly noted that Judge Greene was not authorized to review the effect of the restrictions on the interests of consumers or on trade concerns. The Circuit Court emphasized that the District Court could not deny the BOCs' motions "for any other reason not related to the antitrust laws." [23]

Regarding the manufacture of telecommunications equipment, the Circuit Court upheld the District Court, relying principally on DOJ admissions that (1) the BOCs would likely purchase substantially all of their equipment requirements from their manufacturing affiliates regardless of price or quality, thereby foreclosing some "substantial portion (5–15%) of the equipment market", and (2) that the BOCs would possess both the incentive *and the ability* to cross-subsidize, at least somewhat." (emphasis in original).[24] The Circuit Court determined that "it is not enough for the BOCs . . . to show that a significant number of stable competitors will be able to survive BOC entry." [25] The Circuit Court stated that it was "inclined to think that the question [for CPE] is much closer than it was for telecommunications equipment." Since the BOCs petitioned for complete removal of the manufacturing restriction and urged the District Court not to separate telecomunications equipment from CPE, however, the Circuit Court found that the BOCs had failed to carry their burden under the section VIII(C) standard.

4. The Definition of Manufacturing

The Consent Decree does not contain a definition of the term "manufacturing", a point which has caused great confusion in the industry. In April 1985, AT&T and several other companies reported to DOJ that the several BOCs were violating the manufacturing prohibition by engaging in the design and development of telecommunications products. Two years later, after DOJ refused to act on AT&T's complaint, AT&T filed a motion with the District Court for a declaration that the Consent Decree prohibits design and development as well as fabrication. The BOCs opposed the motion, arguing that this expansive definition went beyond the plain meaning of the word "manufacture" and the expectations of the parties in entering the Consent Decree.

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tion services restriction and remanded to the District Court the issue of whether the information services restriction should remain in effect under the correct standard. This decision has been appealed to the Supreme Court.

[23] Slip Op., at 36. The Circuit Court noted that the district court considered the impact of removing the restrictions on various public policies, including the welfare of local ratepayers, innovation in the manufacturing market, the goal of universal telephone service, first amendment values, and the United States' position in international trade. The district court explained its discussion of these factors by noting that "the same standards may be applied in proceedings addressing continued viability of the restrictions as were used in determining whether the restrictions were to be imposed in the first place." 673 F.Supp. at 583. We disagree. Slip Op., at 35–36.

[24] Slip Op., at 44.

[25] Slip Op., at 46.

The District Court granted AT&T's motion.[26] Judge Greene stated that "[t]here is no valid basis for the position that only fabrication is prohibited by section II(D)(2)." The Judge determined that defining "manufacturing" to include design and development as well as fabrication was consistent with the parties' intent at the time the decree was entered. He noted that the design and development of telecommunications products were even more instrumental to the anticompetitive behavior attributed to AT&T than was the company's actual fabrication of such products. The Judge further applied this definition to the design and development of software integral to telecommunications equipment.

On appeal, the United States Court of Appeals for the District of Columbia Circuit upheld Judge Greene's ruling.[27] The Circuit Court found that the contemporaneous statements of the Consent Decree's objectives left no question that the parties intended to prohibit design and development. The Circuit Court noted that much of the anticompetitive behavior attributed to AT&T involved AT&T's design and development activities, not just its fabrication activities. If permitted to engage in design and development, the Circuit Court speculated that a BOC could use its network information to design unique products, contract out the fabrication work, and then purchase them at inflated prices.[28] Finally, the Circuit Court also determined that the District Court's inclusion of software design in the prohibited manufacturing activities was fully consistent with the court's definition of manufacturing as including design and development.

II. THE MANUFACTURING MARKET TODAY

A. The World Market

The annual world-wide market for communications equipment is now about $113 billion.[29] The United States market, at about $30 billion, is by far the largest in the world and twice the size of the second largest market (the Soviet Union). The North American market as a whole, however, is roughly as large as the European market.[30]

The market for high-technology products (such as central office switches, private branch exchanges (PBXs) and fiber optic transmission equipment) is becoming increasingly concentrated among a few firms.[31] Experts predict that, by the end of this decade, there will be no more than six major switch manufacturers in the world.

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[26] *United States* v. *Western Elec. Co.*, 657 F.Supp. 655 (D.D.C. 1987).

[27] *United States v. Western Electric*, Slip Opinion, No. 88-5050 (February 2, 1990).

[28] Ironically, the Circuit Court also noted that the parties to the decree intended to include design and development in the definition of manufacturing so as to avoid future legal disputes concerning the BOCs' compliance with the antitrust laws. Slip Op., at 11.

[29] "International Telecommunications", *Financial Times Survey*, July 19, 1989, Section III, p. I.

[30] *Telecommunications Equipment*, The Freedonia Group (1986), in 1988 Telephone Industry Directory and Sourcebook.

[31] In the past several years, Siemens has purchased Rolm, a manufacturer of PBXs, from IBM; Siemens combined with GEC (a U.K. company) to acquire Plessey in the U.K. and Stromberg-Carlsson in the U.S.; AT&T has entered joint ventures with Philips in the Netherlands and with Italtel in Italy, and has purchased a controlling interest in GTE's manufacturing facilities in the U.S.; and Ericsson acquired CGCT, a French equipment manufacturer.

This is primarily due to the extremely high research and development costs necessary to remain competitive in this market.[32]

The suppliers of "low-end" customer premises equipment (telephones, fax machines, cordless telephones, telephone answering machines, etc.) are much more numerous. This market is highly competitive and manufacturers must be satisfied with low profit margins. Most suppliers have thus chosen to locate their manufacturing facilities in areas of the world with low labor costs (such as Mexico and East Asia). Sales of simple voice telephones are growing slowly (about 4 percent per year) while sales of data equipment (computers, facsimile, and telex machines), mobile equipment (cellular and cordless telephones), and fiber optic equipment are growing quickly (up to 20 percent a year).[33]

AT&T is the largest manufacturer of communications equipment in the world, supplying about 20% of the world's needs.[34] In 1986, the top ten manufacturers included three from the United States (AT&T, IBM, and Motorola), four from Europe (Alcatel, Siemens, Ericsson, and Philips), two from Japan (NEC and Fujitsu), and one based on Canada (Northern Telecom).[35]

B. The United States Market

1. Trends in the United States Market

The United States market for communications equipment is the largest of any country in the world and comprises about one-quarter of the world market. The United States market grew at rate of about 10 per cent a year from 1984 to 1987, but has slowed recently to about 8 percent. This growth is being driven by new technologies (such as cellular radios, facsimile machines, and fiber optic systems) and the conversion from analog to digital transmission modes.

In his report for DOJ, Dr. Huber noted two "overarching" trends in the equipment markets: "the continued dispersal of equipment consumption, and the steady consolidation of equipment production."[36] He noted that the dispersal of equipment consumption was caused not just by the break-up of AT&T into eight independent companies, but also by the growth of private buyers. He states, for instance, that private buyers and non-telephone company carriers "but much more equipment in almost every category than any single RBOC".[37]

Regarding the consolidation of equipment production, Dr. Huber noted that AT&T and Northern Telecom controlled over 80 per cent of the central office switching market in the United States, that the three largest manufacturers supply over 80 percent of

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[32] It will cost between $1 billion to $1.5 billion for each switchmaker to develop the next family of switches. . . . According to Siemens, the world's third-largest switchmaker, a supplier needs at least 15% of the world market . . . . That leaves room for roughly six switchmakers. There are ten. "A Tale of Too Many," *The Economist*, March 10, 1990.

[33] "A Tale of Too Many", *The Economist*, March 10, 1990.

[34] "DealMakers are Burning Up to the Phone Lines," *Business Week*, March 13, 1989, p. 140.

[35] These figures are based on 1986 sales. *Financial Times*, Survey, Section III, July 19, 1989, p.I.

[36] *Huber Report*, at 1.10.

[37] *Huber Report*, at 1.16.

fiber optic cable, 85 percent of cellular switching systems, and 60 percent of PBXs.[38]

AT&T alone supplies over 50% of tht total United States communications equipment needs and leads in almost every category of communications equipment. It employs about 60,000 people in 25 manufacturing plants throughout the country and employs another 30,000 employees in research, sales, and other manufacturing related activities. All the equipment that AT&T sells in the United States is manufactured in the United States, except for telephones, which AT&T now manufactures in a plant in Singapore. AT&T also owns 11 other plants overseas, employing 17,500 people, which manufacture equipment for sale in foreign markets.

The amount of equipment supplied by other United States suppliers varies depending upon the market segment. For instance, the market for transmission equipment and customer premises equipment is scattered among 50–100 firms, each serving particular niches. Foreign-based manufacturers, however, have made significant inroads in most of the high-technology and high growth products.[39] For instance, Northern Telecom increased its share of the central office switch market by a compound annual growth rate of 20.3 percent per year from 1984 through 1989, while AT&T's sales increased only 2.3 percent per year.[40] In the exploding market for facsimile machines, not one of the dozens of suppliers is based on the United States. In the PBX market, AT&T captured 22 percent of the market in 1988 but was closely followed by Northern Telecom (19 percent), Rolm (recently purchased by Siemens, 16 percent), NEC (8 percent), Mitel (a Canadian-based company recently sold by British Telecom, 8 percent), and Siemens (5 percent).[41]

2. The United States Trade Position

The United States market is very open to foreign competitors compared to many other nations. The result has been increasing foreign penetration of the United States market both in terms of sales and investment. The United States trade balance in communications equipment has shifted from a surplus of over $800 million in 1981 to a deficit of about $2.6 billion in 1988 and $1.9 billion in 1989. Foreign manufacturers supplied 21 percent of the United States telecommunications market in 1988, up from 17 percent in 1984.[42]

Foreign-based firms are also increasing their purchases of United States manufacturers of high-technology products.[43] Annual for-

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[38] *Huber Report*, 1.11–1.12.

[39] It should be noted that some of these foreign-based firms, including Northern Telecom and Siemens, have a substantial manufacturing presence in the United States and employ several thousand American workers.

[40] "Telecommunications Market Review and Forecast: Annual Report of the Telecommunications Industry", 1990 Edition, North American Telecommunications Association (NATA Report), p. 81.

[41] NATA Report, p. 111, Figure 31.

[42] NATA Report, p. 3.

[43] In testimony before the Communications Subcommittee, Alfred Sikes, Chairman of the FCC, noted that there had been about $12 billion in purchases of high-technology equipment firms by Japanese companies in the last two years, and that Japanese companies purchased 26 companies during 1989 alone. Transcript of the Hearings Before the Communications Subcommittee, Committee on Commerce, Science and Transportation, on S. 1981, The Telecommunications Equipment Research and Manufacturing Competition Act, May 9, 1990, pp. 18–19.

eign investment in the United States high technology industries has increased from $214 million in 1985 to $3.3 billion in 1988. From 1984 to 1989, 66 different United States-based computer and telecommunications equipment companies have been bought by or merged with foreign based firms.[44]

The United States suffers a particularly acute trade imbalance in the market for low-end customer premises equipment. Of the $2.6 billion deficit in 1988, $2.4 billion was due to an imbalance in the CPE market. This market has been increasing by dominated by foreign suppliers, especially from Japan and lately from Korea. For instance, although there are sixteen United States-based manufacturers of key telephone systems, the market share of these firms combined is less than 35 percent.[45]

The United States faced a trade deficit in communications equipment with the five major East Asian countries of $3.9 billion in 1988.[46] The United States had a deficit of $71 million in 1988 with France but had a trade surplus with Europe as a whole.

3. United States Research and Development

United States firms in the communications industry are spending more on research and development (R&D) than ever before, but United States spending on R&D lags behind several other nations in terms of percentage of sales. Total United States R&R expenditures ($95 billion in 1988) are greater than that of Japan, West Germany, France, and Britain combined ($80 billion). But the United States trails other countries in non-defense R&D when expressed in terms of percentages of Gross National Product (GNP); according to the National Science Foundation, in 1987, the United States spent 1.8 percent, Japan 2.8 percent, and West Germany 2.6 percent of their respective GNPs on R&D.[47]

AT&T devotes more resources to communications equipment R&D than any other communications equipment manufacturer. Its R&D budget has grown 35 percent since sales divestiture, from $2 billion in 1983 to approximately $2.7 billion in 1988 (about 7 percent of total revenues). The BOCs spent over $1 billion in R&D activities in 1988, including research done at Bellcore and at the BOCs' own independent research facilities.[48] When combined, the total R&D budget for AT&T and the BOCs is almost twice as large as the R&D budget berfore divestiture, a growth rate of almost 20 percent per year.

The R&D budget of the BOCs alone, however, lag behind the typical R&D expenditures of other firms, and especially high-technology firms. The BOCs committed only 1.4 percent of their revenues to

[44] The home country of the acquiring firms and the number of transactions for each are as follows: Canada 11; Japan 9; Hong Kong 1; Australia 1; Great Britain 21; West Germany 7; Italy 6; France 4; Switzerland 3; The Netherlands 2; and Israel 1. DATABASE: Dun & Bradstreet, Promt, IAD, Securities Data Co. and Salomon Bros.

[45] AT&T pleading before the International Trade Commission (ITC). AT&T recently obtained a ruling from the ITC on this complaint that Japan and Korea had engaged in unlawful dumping of their products in the U.S.

[46] "U.S. Seeks Larger Market Share of Telecommunications Industry," *Investor's Daily*, April 25, 1989, p. 10.

[47] "Research and Development Spending to Rise 4.8 percent in 1990, Battelle Predicts", *The Wall Street Journal*, Thursday, December 28, 1989, p. 12.

[48] Four BOCs NYNEX, Ameritech, USWest and Southwestern Bell have established their own research facilities.

R&D in 1987. This is less than one-half the average of all United States industry (3.4 percent) and much less than the average for the typical telecommunications and computer firms (average 6 percent to 10 percent).

II. REASONS FOR REPLACING THE MANUFACTURING RESTRICTION WITH REGULATORY SAFEGUARDS.

A. The Congress and the FCC, not the Federal courts, should be setting telecommunications policy

As a result of the peculiar history of the growth of competition in communications and the antitrust case against AT&T, a Federal court judge is now responsible for regulating much of the communications industry. Even though the Consent Decree only governs the BOCs, the BOCs have such a strong presence in the industry that their activities inevitably affect the entire communications industry.[49] Judge Greene's decisions concerning the permissible lines of business that the BOCs may enter thus have the effect of setting national telecommunications policy.[50]

There is no question that Judge Greene has acted within the bounds of the law. Judge Greene's responsibilities to oversee the Consent Decree derive directly from an act of Congress. In passing the Tunney Act of 1973, Congress specifically directed Federal court judges to review antitrust settlement decrees to determine whether they would be in the public interest.[51] Judge Greene has shown flexibility in administering the decree, and has often made changes to the decree that have favored the interests of the RBOCs.[52]

Nonetheless, there is considerable question whether it is appropriate public policy for a single Federal court judge to be exercising such control over the communications industry. As familiar as Judge Greene may be with the issues involved in the Consent Decree, there are several reasons why the Judge is not the most qualified person to be making Federal communications policy.

(1) The Judge has a small staff compared with the amount of work involved in enforcing the decree. As the Judge himself has

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[49] Collectively, the BOCs control about 60 percent of the nation's telecommunications assets or slightly more than half a trillion dollars in embedded capital investment. The BOCs employ more than one percent of the total United States workforce and earn revenues of over $75 billion annually. They purchase about 70 to 80 percent of the central office switches sold in this country, and collectively purchase about 50 percent of all telecommunications equipment sold in this country. Further, they serve 80 percent of the country's telephone customers and carry an even greater percentage of actual traffic. In short, the activities of the BOCs, and the constraints on those activities, have a substantial effect on the United States communications industry and, indeed, the entire economy.

[50] It is interesting to note that, in choosing the top 25 most influential telecommunications leaders in the world in 1988, *Communications Week* listed Judge Greene second, just after Richard Butler, Secretary General of the International Telecommunications Union, and just before Robert Allen, Chairman of AT&T. In 1989, *Communications Week* listed Judge Green fifth, three spots ahead of Alfred Sikes, Chairman of the FCC. *See. Communications Week*, October 24, 1988, p. C3; *Communications Week* November 13, 1989, p. C2.

[51] Antitrust Procedures and Penalties Act, 15 U.S.C. 16(b)-(f) (hereinafer referred to as the Tunney Act).

[52] For instance, Judge Greene refused to accept the DOJ's proposal to make the line of business restrictions permanent (by allowing them to file for waivers and agreeing to review the need for the restrictions every three years), he permitted the BOCs to provide "Yellow Pages" directories and to market CPE, he removed the limitation that barred the BOCs from taking in more than 10 percent of their total revenues from non-communications ventures, and he loosened the information services restriction to permit the BOCs to provide "gateway" functions.

admitted, it is taxing for him to resolve all questions related to the decree with a limited staff of a few clerks at the same time that he handles a full judicial caseload.[53] The BOCs have filed over 200 waiver requests since the decree was entered. In addition, the Judge has been required to rule on numerous petitions for clarification and declaratory rulings concerning the terms of the decree, and he is also involved in several enforcement proceedings concerning possible violations of the MFJ by the BOCs. The sheer scope of these activities would make it difficult for any single person to devote the time and attention to these issues that they deserve.

(2) The Judge's mandate is to enforce antitrust law standards, not "public interest" standards. As the United States Court of Appeals for the D.C. Circuit recently ruled, the Judge may not consider ratepayer concerns or international trade concerns in enforcing or interpreting the decree. As a result, the Judge must make his rulings based upon one aspect of the law. The setting of communictions policy, on the other hand, requires a consideration of all relevant factors that affect the "public interest".

(3) The Consent Decree requires the court to make a number of decisions based on communications economics, technology, and marketing. No Federal court judge can be expected to be an expert on these matters. For instance, the Court must make decisions based on the distinction between design of the telephone network and design of equipment that is used in the network, between providing customer equipment and manufacturing customer equipment,[54] and between engaging in applied research for the issuance of generic product specifications and engaging in the design and development of specific products. Even assuming a rational basis for these rules, a district court judge, with a staff of a few law clerks, is not the proper person to be drawing such distinctions that depend so heavily on a detailed understanding of technology and the market.

(4) The Court is beyond the control of Congress and the President, the two branches of government established by the Constitution to be responsbile for passing and enforcing laws. The judicial branch was created to act as an independent check on the behavior of the legislative and executive branches of government. As a result, and in contrast with the officials of the Executive Branch and independent agencies, the courts are immune from congressional influence.[55] This is contrary to the Federal scheme of a tripartite government.

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[53] The enforcement of the AT&T decree by my court is a considerable personal burden, for the work exists on top of a normal judicial caseload, and that burden is rarely accompanied by the opportunity to consider and decide novel or otherwise interesting legal issues that would balance the extra work in an intellectual sense. Yet I have a sworn obligation as a member of the judiciary to enforce laws and judgments even if some of the work is burdensome, or if it is accompanied by criticism from the sidelines by those with an economic or ideological axe to grind. Unless and until the laws are changed, I will carry out my responsibilities. "The Antitrust Laws, Telecommunications, and Consumers", an address by Judge Harold H. Greene, February 5, 1988.

[54] The BOCs argued in petitions before the Judge that the process of "providing" CPE permits them to perform research and design engineering. If not allowed to perform such functions, the BOCs argued, they could not market distinctive lines of CPE, as the court intended them to do.

[55] As Chairman Sikes of the FCC pointed out at the May 9th hearing, ". . . I would add additionally that if you do not think I am doing a good job, you will not hesitate, I know, to call me up here [to testify]. And I would doubt that Judge Greene has even been up here [to testify before a Congressional committee]." Hearing Transcript, p. 19.

Only Congress can consider all the relevant factors in deciding whether the BOCs should be permitted to manufacture. It is much more consistent with our political structure for Congress to decide whether these restrictions should exist, and, if so, for the FCC to implement the necessary safeguards.

The FCC is the expert agency created by Congress specifically for the purpose of regulating the communications industry. The FCC has an extensive staff of professionals, including economists, engineers, lawyers, and telephone industry analysts, with many years of experience in the industry. It is responsible for monitoring and regulating the telephone industry, and it has developed sophisticated rules governing the industry's operations. The FCC also has authority to take into account antitrust laws in making its decisions. Thus, the Commission is far better situated than Federal court judges to understand the technical operations of the telephone network, take into account the principles of antitrust laws, consider the concerns of telephone service ratepayers, and integrate these findings into a decision that represents the "public interest." This bill reasserts authority for regulating the communications industry with Congress and the expert agency created to carry out that task.

B. Lifting the manufacturing restriction will promote the international competitiveness of the United States in high technology industries

The competitive position of the United States' manufacturing industry is facing a serious challenge.[56] This appears to be especially true in the field of the communications equipment [57] manufacturing industry. There is substantial evidence indicating that the United States has already begun to lose its world leadership position in this market. The amount of funds spent by United States companies on research and development is well below the proportional amounts spent by other countries; the United States trade position has declined rapidly since the divestiture; foreign firms are increasing their share of the United States equipment market, their investment in United States high-technology companies, and the percentage of United States patents that they own; and more United States jobs are being moved overseas.

The market for communications equipment is a global one, and several large, foreign-based equipment manufacturers are rapidly consolidating to divide up the world market among them. A large, worldwide market share is becoming increasingly important to the development of new technology because of the heavy research and development costs that are necessary to developing "state-of-the-art" technology. Unless the United States takes a more active role in permitting its companies to compete fully in these international markets, the United States faces the possibility that it will be shut out of the world market.

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[56] *See*, "Paying the Bill: Manufacturing & America's Trade Deficit," Office of Technology Assessment, Congress of the United States, June 1988. This report finds, among other things, that "* * * America's relative decline [in manufacturing] is not just the natural effect of growth in other countries but also reveals a fundamental weakening in our ability to use technology to make things cheaply and well." *Id.*, at 26.

[57] For purposes of convenience, the term "communciations equipment" will be used to include both "telecommunications equipment" and "customer premises equipment."

Lifting the manufacturing restriction on the BOCs may help the United States reverse course in several ways. Because of their intimate knowledge of the communications equipment industry and their tremendous resources, the BOCs may themselves be able to become strong international players. The BOCs' ability to work closely with existing United States manufacturers could help these manufacturers grow into world powers. Lifting the restriction may also stimulate spending on R&D that could spawn new and innovative technologies based in the United States. At a minimum, lifting the restriction will ensure that the United States is not holding back resources that could have a significant impact on the Nation's ability to compete.

Because of their years of experience in the telecommunications business, the BOCs can be expected to make a significant contribution to the development of new and sophisticated communications technology. That there are substantial efficiencies between the operation of the local exchange network and the design and development of equipment used in the network and to connect with the network is without question.[58] Allowing the BOCs to manufacture should allow them to take full advantage of their expertise and their efficiencies by investing in and developing new manufacturing entities to satisfy their needs and the needs of their customers. Such efficiencies include the BOCs' sharing of joint costs, their knowledge of the network, their familiarity with customers' needs, and the ease of administration. Allowing the BOCs to participate in the equipment manufacturing business could also benefit the services customer, as the BOCs will be able to develop and install equipment and add new features to their telephone networks more quickly if they can contribute to designing equipment that will satisfy the needs f their customers.

The following provides a more detailed explanation of the challenge faced by the United States in the communications equipment industry and the reasons that lifting the manufacturing restriction on the BOCs may improve the Nation's ability to compete on a worldwide basis.

Research and Development Expenditures.—R&D is particularly important to industrial competitiveness. Highly developed research laboratories are one of the key foundations of a healthy and growing industry. For instance, many experts attribute AT&T's dominance over the telecommunications equipment marketplace to its

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[58] In denying a request to separate Western Electric and Bell Laboratories from AT&T, Judge Greene recognized that the nation had benefited greatly from the AT&T's joint ownership of its communications services businesses and its manufacturing businesses:

. . . AT&T argued vigorously that the present structure of the Bell System was in significant part responsible for this admirable record [of innovation in the telecommunications industry] because the researchers were linked with a manufacturer—Western Electric—and with two service organizations—the Operating Companies and the Long Lines Department.

The Court is of the opinion that there is considerable merit to these contentions. Bell Laboratories has been a positive force both in basic and in applied research, and this research has had a beneficial effect on the nation's economic position in all of its varied aspects. It also seems to be true that the links between Bell Laboratories and the manufacturing and service arms of the Bell System have been of assistance in the achievement of these technological successes. (footnotes omitted.)

In a footnote, the Judge recognized that these benefits to the nation's economic position included basic scientific advance, cheaper and better products for consumers, foreign trade, and national defense. 552 F. Supp. at 167.

outstanding research facilities at Bell Laboratories. Billions of dollars in government funds are spent on research every year.

Total research and development spending in the United States, however, is in decline and lags that of foreign countries.[59] This trend is particularly apparent in the telecommunications industry. The mounting trade surpluses in telecommunications equipment enjoyed by foreign manufacturers have enabled them to underwrite substantially higher levels of R&D spending on communications and related technologies, unmatched by leading United States manufacturers and the BOCs. Between 1982 and 1987, for instance, Japan's six leading manufacturers of computers, communications, and electronics—NEC, Matsushita Electric, Toshiba, Pioneer Electronic, Sony and Hitachi—were able to increase annual outlays on R&D from $2.5 billion to $9.3 billion, or an average compounded rate of nearly 25 percent per year. Similarly, between 1985 and 1988, the five lending high technology manufacturers in Europe—Siemens, Philips, Plessey, Ericsson, and Thomson—increased their annual investment in R&D from nearly $4 billion to $7.1 billion, an average annual rate of about 22 percent.

By comparison, United States industrial R&D spending on these same technologies has remained relatively flat. Between 1982 and 1988, AT&T's reported annual outlays on R&D rose from $1.8 billion to $2.6 billion, an average annual rate of only 6 percent. Spending by the BOC's on R&D is well below the average high technology firm. While the BOCs spend about 1.4 percent of their sales revenues on R&D, the average high technology firm spends between 6 and 8 percent on R&D.

The trends in R&D spending have had an impact on the ability of United States firms to obtain patients in new telecommunications technologies. Between 1980 and 1988, for instance, the percentage of telecommunications patients awarded by the United States Patent Office to United States inventors fell from 58 percent to 48 percent of the total, whereas the percentage of such patients awarded to Japanese interests rose from 18 percent to 31 percent. In both years, Europeans accounted for the remaining 24 percent of all telecommunications patents awarded in the United States.[60]

The MFJ restriction discourages the BOCs from conducting such research for several reasons:

> (A) If a BOC develops a new technology or product, the manufacturing restriction bars the BOC from manufacturing that product and bringing it to market. Thus a BOC has no incentive to engage in research because its ability to profit from that investment is limited. If the restriction is lifted, the BOCs can develop, design, and fabricate a product based upon their research discoveries. The opportunity to make a profit from the manufacture of a product they develop thus should encour-

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[59] [T]he U.S. is lagging its toughest foreign competitors [in research and development (R&D) spending]. Latest figures from the National Science Foundation show that in 1987 the U.S. spent 2.6% of its gross national product on R&D, slightly below 2.8% for West Germany and 2.9% for Japan. However, the U.S. spent only 1.8% of GNP [Gross National Product], . . . on nondefense R&D in 1987, far below 2.6% for West Germany and 2.8% for Japan. France and the U.K. invested about the same share of GNP in nondefense R&D as the U.S. did.

"Research and Development Spending to Rise 4.8% in 1990, Battelle Predicts", *The Wall Street Journal*, Thursday, December 28, 1989, p. 12.

[60] U.S. Patent Office, "Technology Profile Report: Telecommunications," July 19, 1989, p. A3.

age the BOCs to spend more of their resources on research than they have since the divestiture.

(B) The court's interpretation of "manufacturing" makes it very difficult for the BOCs to know what research activities are permitted. The court's decision effectively drew a line between R (research) and D (development). This has reduced any efficiencies of conducting joint research and design and development activities and has created substantial uncertainty for the BOCs. For instance, the BOCs may conduct applied research and issue generic product specifications but may not design particular products that meet those specifications. The BOCs may also design software for their telephone network, but may not design software for equipment that is installed in the network. Because of the severe penalties that can apply if the BOCs cross the line into prohibited "manufacturing" activities, the BOCs are discouraged from engaging in any research activities at all.[61]

Lifting the manufacturing restriction should have a positive effect on the amount of research conducted by the BOCs and by the entire communications industry. There will be no doubt as to what research the BOCs may conduct. It will also allow the BOCs to profit from that research by bringing a new product to market. The BOC's increased spending on research and development, and its ability to coordinate its R&D activities with its operation of the network should also, of course, improve their chances of developing new technologies and acquiring patents.

Further, BOC entry may encourage AT&T and other manufacturers to devote more resources to research in order to stay competitive with the BOCs' manufacturing affiliates. Finally, lifting the manufacturing restriction might allow the United States to shift some of the responsibility and desire to conduct greater research onto private industry and, possibly, reduce the pressure on the United States Treasury to fund such research activities.

Trade Balance in Communications Equipment.—The United States market is very open to foreign competitors compared to many other nations. The result has been increasing foreign penetration of the United States market both in terms of sales and investment. The United States trade balance in communications equipment has shifted from a surplus of over $800 million in 1981 to a deficit of about $2.6 billion in 1988 and $1.9 billion in 1989. The deficit in communications equipment fell at a rate nearly four times faster than the decline in the Nation's overall trade balance in recent years.

Whether the BOCs' entry into manufacturing will reverse the country's trade deficit, of course, cannot be predicted. The balance

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[61] Bell Atlantic brought this confusion concerning the scope of the manufacturing restriction to light in its recent filing with NTIA. Bell Atlantic notes that, after Judge Greene's order interpreting the meaning of the term "manufacturing", it submitted to the court a detailed description of the engineering and software development activities in which it was engaged. The court found that some of these activities "may be forbidden" and might subject Bell Atlantic to an enforcement proceeding. Rather than specifying which activities were potentially in violation of the Decree, the court directed Bell Atlantic to seek guidance from DOJ. In commenting on Bell Atlanta's request, however, DOJ refused to provide any guidance because, it said, it "has neither the obligations nor the resources" to do so. Bell Atlantic's Response to NTIA Notice of Inquiry, Docket 81267-8267, January 1989, at 6, n. 21.

ot trade depends upon many factors unrelated to the quality and price of the products produced, such as exchange rates, trade barriers and tariffs, the telephone network standards in that country, etc. But it is clear that permitting the BOCs to enter the market, especially with the requirement that they make all their products in the United States, can only help the United States trade position.

BOC participation in manufacturing could help the trade deficit in at least two ways. First, the BOCs may generate significant exports of communications equipment from their own manufacturing activities. Second, BOC manufacturing may also stimulate AT&T to become more competitive, thereby improving AT&T's productivity and export potential. Several of the BOCs have complained that AT&T has not been responsive to their equipment needs because its leadership among United States manufacturing firms is unchallenged. As a consequence, the BOCs have had to turn to foreign suppliers to satisfy some of their equipment needs.

It is true that the United States trade deficit in telecommunications equipment is primarily due to the import of "low-end", low-profit customer premises equipment (telephones, cordless telephones, fax machines, etc.) that the BOCs are unlikely to manufacture. It is also true that the United States has a trade surplus in the "high-end" equipment market, that of intelligent switching equipment.

These facts do not tell the whole story, however. For one thing, the United States trade surplus in "high-end" switching equipment is partly due to the exports of switch-manufacturing plants in the United States owned by foreign-based companies such as Northern Telecom and Siemens. There is considerable question as to whether the United States should be satisfied with this overall surplus if it results from exports by foreign-based companies. Also, even if the BOCs forsake the "low-end" equipment market and enter the "high-end" equipment market, the BOCs' manufacturing activities might result in additional exports of this "high-end" equipment, resulting in an improvement in the overall balance of trade.

Decline in Market Share by United States Firms.—The market share of United States companies has fallen dramatically in several key equipment markets related to communications. According to a recent speech by the Assistant Secretary of Commerce for Communications and Information, Janice Obuchowski, reporting on a study by the Department of Commerce, the United States industry's global market share from 1984 to 1987 dropped by the following amounts: central office switching equipment fell from 30 percent to 24 percent; fiber optics fell from 75 percent to 50 percent; data PBXs fell from 100 percent to 36 percent; statistical multiplexers fell from 94 percent to 35 percent; key telephone sets fell from 28 percent to 22 percent; and seimconductors fell from 54 percent to 41 percent.[62] United States firms produce no facsimile machines sold in the United States. Similar figures also apply to other consumer electronics equipment, such as phonographs, televisions, audio tape recorders, video cassette recorders, and machine tools

[62] "Telecommunications Study Finds Mixed Bag on U.S. Competitiveness", *Inside U.S. Trade*, November 24, 1989, p. 17.

(although the BOCs are not currently barred from producing these items).[63] Foreign manufacturers supplied 21 percent of the United States telecommunications market in 1988, up from 17 percent in 1984.[64]

The BOCs' entry into manufacturing should have a positive impact on the total market share controlled by United States firms. Because BOCs' intimate knowledge of the United States market, network standards, customer needs, business economics, etc., the BOCs are likely to be strong competitors in the equipment market. Although the BOCs will certainly compete for many contracts with other United States firms, it is also likely that the BOCs will develop innovative products suiting particular customer needs that will expand the total equipment market. In other words, rather than simply taking business away from existing manufacturers, the entry of the BOCs may stimulate greater customer demand for communications products in a way that will advantage all equipment manufacturers.[65]

Movement of Jobs Offshore.—AT&T has closed down or reduced work force at 33 manufacturing plants in the United States since the divestiture, resulting in the loss of 34,374 jobs.[66] At the same time, AT&T has signed 18 joint venture agreements with foreign manufacturers and has opened seven new manufacturing facilities overseas. AT&T is not the only manufacturer in the communications equipment industry to have moved jobs offshore.[67] According to the Small Business Administration, from 1980 to 1986, small United States manufacturers (i.e., firms with less than 500 employees) added nearly 700,000 persons to their employment rolls, as compared to a net loss of nearly 2 million jobs among large United States manufacturers.[68]

Allowing the BOCs to manufacture should also promote job opportunities in the United States. If the seven BOCs start their own manufacturing entities, they have the potential to create thousands of new employment opportunities for scientists, technicians, engineers, marketers and support staff. Even if the BOCs enter the manufacturing market by joint venture with existing firms, the expansion of these existing firms might create thousands of new employment opportunities.[69]

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[63] Council on Competitiveness, *Picking Up the Pace: The Commercial Challenge to American Innovation*, September 1988, p. 15, using data from the United States Department of Commerce.

[64] NATA Report, p. 3.

[65] This has occurred in the market for long distance telephone service and also for international telecommunications services.

[66] See Bell Atlantic's Response to NTIA's Notice of Inquiry, January 31, 1989, pp. 19–21; and Communications Workers of America, "Information Industry Report," October 19, 1988.

[67] Ironically, the Consent Decree does not prohibit a Bell Company from engaging in manufacturing activities outside of the U.S., as long as the products are only sold outside the U.S. Thus, the Decree has the unfortunate effect of permitting the BOCs to do overseas that which they cannot do domestically.

[68] "The State of Small Business: A Report of the President and Annual Report on Small Business and Competition," U.S. Small Business Administration (Washington, D.C.: U.S. Government Printing Office, 1988).

[69] A recent study performed on behalf of US West found that lifting the information services and manufacturing restrictions would result in a net gain of 55,000 jobs by the year 2000 in the US West Region alone. "The Economic Impact of Telecommunications in the US West Region and the United States." Center for Economic Analysis, University of Colorado, Boulder, CO, November 1, 1989.

To summarize, substantial benefits can be expected from permitting the BOCs to enter the business of manufacturing communications equipment. The BOCs have considerable expertise and experience in the communications field that can be readily transferred into manufacturing activities. Removing the manufacturing restriction may not be the solution to all our competitive challenges. But this policy at least will not restrain these United States businesses from having the opportunity to compete in domestic and world markets. These increased manufacturing activities can be expected to stimulate greater spending on R&D, thus spurring innovation and United States patents, improve the Nation's trade position, increase job opportunities, increase the market share of United States firms both in the United States and abroad, and allow United States firms to invest more heavily in the United States.

C. The Consent Decree imposes an unfair and unjustified restriction on the BOCs

The manufacturing restriction is an unfair and unjustified restriction on the BOCs. No other company involved in the local exchange telephone business is similarly banned from the manufacturing market. In fact, several large telephone companies have extensive manufacturing concerns.

GTE, which takes in more revenues from providing telephone service than several BOCs, supplies about 10 percent of the Nation's central office switching equipment needs.[70] United Telecom owns the North Supply Company, a leading distributor of voice and data communications equipment (customer premises equipment and network equipment). There is no distinction that can be made concerning the extent of the market power of the BOCs and GTE, for instance, over the purchasing market, as both the BOCs and GTE, each purchase about 10 percent of the central office switches sold in the country. The BOCs, GTE, and United Telecom enjoy a dominant position over local telephone service and thus have the same incentive to engage in cross-subsidization.

One must also question the vertical integration between AT&T's long distance business and its manufacturing businesses. AT&T is the largest manufacturer of communications equipment in the world, and it is the dominant provider of long distance services and international services in the United States. AT&T's service businesses purchase more equipment for its long distance and international networks from its own manufacturing affiliates than the sum total of equipment purchased by any one BOC.

Clearly, if there is a concern about vertical integration between telecommunications services and the manufacture of communications equipment, that concern should apply equally to other local exchange carriers and to AT&T. There is little evidence that these carriers have abused their ability to engage in joint participation in both the services and manufacturing markets to the detriment of competition or of customer rates. There is little reason to believe

[70] GTE and AT&T recently entered a joint venture agreement, called AG Communications Systems, to manfacture these central office switches. AT&T will gradually assume complete ownership of the joint venture.

that the BOCs would engage in anticompetitive activity while these other carriers would not.

Some argue that the MFJ restrictions are justified because of the BOCs' past anticompetitive activity. The court never determined, however, that AT&T engaged in unlawful anticompetitive activity prior to the divestiture.[71] Rather, AT&T and DOJ reached an agreement which bound the BOCs to the provision of regulated telephone service before the BOCs became legal, independent entities. The BOCs had little opportunity to oppose these restrictions, which were agreed to by their former owner and current competitor, AT&T.

To summarize, the BOCs are bound by a provision that does not apply to any other local telephone companies or long distance companies. There is no reason to punish the BOCs for anticompetitive activity when there was no judicial finding that anticompetitive activity had occurred. The manufacturing ban was adopted as part of an agreement between DOJ, which has not changed its position, and AT&T, a current competitor of the BOCs. Thus, it is patently unfair to continue to bind the BOCs by a restriction when they were never found to have been at fault and when the restriction was imposed by a competitor of the BOCs, especially when that competitor is not bound by a similar restriction.

D. Anticompetitive harm to the communications equipment market is unlikely to occur if the BOCs are permitted to manufacture

As discussed earlier in this report, the District Court never found that AT&T had engaged in anticompetitive activity regarding its manufacturing and procurement activities. Yet, even if the BOCs had engaged in anticompetitive conduct while they were a part of AT&T, it is unlikely that the BOCs could cause harm to the communications equipment market through anticompetitive conduct today.

As several of the witnesses testified, the communications market has changed drastically in the last eight years. The divestiture of AT&T into eight separate companies, the globalization of the communications equipment market, the concentration of equipment suppliers, the increasing foreign penetration of the United States market, the continued dispersal of equipment consumption, for example, have substantially changed the market for communications equipment. Further, the safeguards included in the bill and the FCC's enhanced regulatory safeguards should permit the Commis-

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[71] Judge Greene did find, in ruling on a motion for directed verdict filed by AT&T after the government had presented its case, that the government had met its burden of presenting enough evidence to warrant continued prosecution of the case. The case was settled before AT&T had finished presenting its defense. The Judge also stated that the case against AT&T regarding its manfacturing activities was not as strong as the case against its long distance operations:

"It should be noted, however, that the government's procurement case was not extremely strong. In the first place, it consisted only of sixteen individual 'episodes.' Measured against the large field of procurement decisions in which the Bell System was engaged, this was not a formidable number. . . . Moreover, even as to those sixteen episodes the proof was not overwhelming. Where the government's evidence tended to demonstrate anticompetitive acts, AT&T's market share was generally not high; where market share was high, there was relatively little evidence of anticompetitive acts."

The part of the case dealing with pricing of equipment sold by Western Electric was dismissed on September 11, 1981.

552 F. Supp. at 163, note 137.

sion to monitor anticompetitive activity more closely. These changes have reduced the possibility that the BOCs could gain an anticompetitive advantage in manufacturing.

In presenting the antitrust case, DOJ argued to the court that AT&T had engaged in three general types of anticompetitive conduct: 1) the BOCs purchased Western Electric equipment even when those products were more expensive or of lesser quality than alternative goods available from unaffiliated vendors; 2) the BOCs granted Western Electric premature and otherwise preferential access to necessary technical data, compatibility standards, and other information concerning the BOCs' network; and 3) the Bell System subsidized the prices of its equipment with the revenues from the BOCs' monopoly services.

The following section examines the BOCs' economic strength, their incentives to engage in anticompetitive behavior, and the ability of the FCC and other regulators to prevent the BOCs from engaging in such conduct because of their manufacturing activity.

1. The divestiture and other changes have reduced the possibility of significant anticompetitive activity

The market power possessed by each BOC over the communications equipment market is much less than the market power formerly exercised by AT&T. As a result, there is less reason to believe that the BOCs could cause harm to the communications equipment market.

Prior to the divestiture, AT&T purchased approximately 80 percent of all the central office switching and transmission equipment sold in the United States. About 80 percent of that equipment was manufactured by AT&T's manufacturing subsidiary, Western Electric.[72] As a result, only small fractions of the market remained open to independent manufacturers. Today, the seven RBOCs are separate independent companies. They each purchase about 10 percent of the total central office switching and transmission equipment sold in this country. Further, private (non-telephone company) purchasers of communications equipment account for a much larger percentage of the total purchase market than ten years ago. Dr. Huber found that, as a group, private buyers "buy much more equipment in almost every category than any single RBOC." As a result, even if a BOC were to satisfy all its equipment needs by purchasing products from its manufacturing subsidiary, approximately 90 percent of the equipment market would still be open to independent manufacturers. Thus, the BOCs do not have the ability to foreclose the equipment market to competing manufacturers that AT&T possessed prior to the divestiture.

Market forces are also likely to constrain the BOC's incentives to engage in unlawful cross-subsidization and discrimination. Some argue that the BOCs could purchase lower-quality equipment at inflated prices from their affiliates and pass these costs onto their ratepayers. Because of the potential threat of competitive to the BOC's local telephone services, however, the BOCs will be reluctant

[72] *Huber Report* at 1.15. A substantial portion of the remaining 20 percent of telephone company purchases was made by the GTE operating companies, which also purchased telecommunications equipment from an affiliated manufacturer.

to purchase equipment from their subsidiaries if that equipment is overpriced or is not as high in quality as other equipment in the market. The BOCs cannot afford to suffer lower quality service and higher prices when competitors to their access services are lurking around the corner. Even if true competition does not arrive for several years, network equipment often is not replaced for a decade or longer. Thus, the BOCs have little incentive to purchase equipment from themselves if this equipment is not competitive on a cost and quality basis with the equipment of competitive manufacturers.[73]

Even if the BOCs were to attempt to engage in unlawful self-dealing, the growth of competition will make it easier for regulators to detect such unlawful activity. It would be difficult for a BOC to make a profit on its manufacturing affiliate's operations if that affiliate sold equipment only to its affiliated BOC. Each BOC purchases such a small percentage of equipment sold in the United States that its sales to itself would not be sufficient to support the large research and development costs that are necessary to remain in the business in the long run. If the BOC's manufacturing affiliate sold equipment only to its affiliated BOC, this would raise suspicions at the FCC and DOJ that the BOC was engaging in unlawful self-dealing.

The manufacturing affiliate would, most likely, have to market its products outside the BOC. This has two advantages. The need to sell outside the BOC would put pressure on the manufacturing affiliate to develop products that are competitive with other manufacturers. Second, the sales outside the company would provide regulators with price "benchmarks." Regulators could easily compare the prices paid by the BOCs for equipment it purchases from its affiliate with the prices paid by other purchasers for that same equipment. The existence of these "benchmarks" makes the process of detecting unlawful activity much easier than when there were no other alternative sources of similar equipment.

The existence of several competitors in the communications equipment market also will aid in preventing anticompetitive conduct. For one, the existence of competitive products in the marketplace will also provide "benchmarks" for comparing the prices paid by the telephone company to its manufacturing affiliate for similar equipment manufactured by that affiliate. Also, the equipment manufacturers and ratepayers will undoubtedly seek to protect their interests by scrutinizing every move that the BOCs make. If there is any potential violation, these private "police officers" will be sure to bring these matters to the attention of the Commission and DOJ.[74]

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[73] It would not in itself be a violation of the antitrust laws for a BOC to purchase equipment manufactured by its manufacturing affiliate. If a BOC purchases its own equipment because it is the higher quality or has the lowest price, there is no anticompetitive harm. There is only a potential antitrust violation if a BOC purchase equipment from itself unreasonably in order to favor its manufacturing affiliate.

[74] The bill, as reported, requires the BOC's manufacturing subsidiaries to file public reports concerning their activities with the appropriate regulatory authorities. These public reports, in addition to the filings made before the FCC, will assist the private interests in monitoring the BOC's activities.

2. The FCC and the States are better equipped today to protect against anticompetitive activity.

Regulators are generally better equipped today to prevent and detect anticompetitive activity than they were prior to the divestiture. The FCC has developed several new and stronger measures to protect against cross-subsidization and discrimination. The Commission has adopted sophisticated rules governing cost allocations to prevent the BOCs from shifting costs from the unregulated, manufacturing activities to its regulated telephone operations.[75] The FCC has also boosted its auditing programs in the past few years, partly in response to congressional concerns. For instance, the Commission now has an automated reporting and management information system (ARMIS), which allows the Commission to target audit and enforcement resources. The decision of Congress last year to increase the potential penalties for violations of the Act to up to $1 million should help to deter such conduct.

The FCC has also worked hard to develop strong relationship with the State regulatory commissions that have oversight authority over the BOCs' intrastate communications services. The FCC frequently confers with State public utility commissions to coordinate their regulatory activity. In short, the BOCs would find it very difficult to engage in any unlawful cross-subsidization should they desire to do so.[76]

The Commission has established other regulations to protect competitors in the equipment marketplace against potential anticompetitive activity. The risk of interconnection discrimination has been limited by widespread acceptance of FCC regulations that spell out the requirements for interconnection of terminal equipment.[77] The FCC has also contained discrimination in installation, repair, and maintenance by the creation of Centralized Operations Groups that process, coordinate, and schedule orders for CPE interconnection. Private interconnection standards have also been developed by working groups of the International Telecommunication Union and other standard-setting bodies that are equally available to all manufacturers. Perhaps most important are rules that require the disclosure of information about network design changes.[78]

E. The bill contains several safeguards to provide further protection against anticompetitive harm to the communications market

The bill recognizes that, despite the changes in the communications industry and the enhanced ability of regulators to detect anticompetitive activity, there remains a possibility that the BOCs' entry into the manufacturing market could result in harm to ratepayers and competition in the manufacturing market. The BOCs continue to hold a monopoly over local exchange service in the

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[75] *See* Separation of Costs of Regulated Telephone Service from Costs of Nonregulated Activities, CC Docket No. 86-111, Report and Order, FCC 86-564, released February 6, 1987.

[76] *See*, Testimony of Alfred C. Sikes, Chairman, Federal Communications Commission, before the Communications Subcommittee, on S. 1981, May 9, 1990.

[77] 47 C.F.R. 64.702(d) (2) (1985). These rules were clarified in *Computer and Business Equipment Mfrs.' Ass'n. 93 FCC 2d 1226 (1983).*

[78] *See*, 47 C.F.R. Part 68 (1985).

markets they serve.[79] Although the BOCs are beginning to face some competition in some urban areas, the extent of this competition is small when compared to the total revenues earned and traffic carried by the BOCs.

For this reason, S. 1981 contains several safeguards to protect against the possibility that anticompetitive conduct or harm to the consumers of telephone service could occur. These safeguards should also aid regulators in detecting and preventing such conduct. For instance, the bill bars any cross-subsidization and requires that a BOC can only purchase equipment from its manufacturing affiliate at the open market price. The bill also requires that competitive manufacturers be given "comparable opportunities" to sell equipment to the telephone company that the BOC provides to its manufacturing affiliate.

Further, the bill contains several specific provisions to assist in preventing such possible anticompetitive activity. For instance, to aid in preventing cross-subsidization, the BOCs' manufacturing activities can only be conducted out of an affiliate that is separate from the telephone company and that complies with, at a minimum, several protective measures specified in the bill. The bill provides that the BOCs must disclose information about their network to all manufacturers at the same time that they make that information available to their manufacturing affiliates. Other prophylactic measures are described in more detail later in this report.

F. Conclusion

Since the divestiture, both technological advances and the emergence of a global economy have completely altered the communications marketplace. The market is becoming more international in scope, and foreign manufacturers are taking advantage of the openness of the United States market to increase their worldwide market shares. The United States is facing the possibility of being shut out of this emerging world market if it does not take action soon. The current MFJ restrictions serve to sideline seven major players and leave their tremendous assets sitting idle while foreign competitors invade our markets and grow into worldwide powers. The BOCs possess enormous resources that could be of great benefit to the United States economy.

The BOCs could bring enormous benefits to the market. Lifting the manufacturing restriction will allow them to take advantage of the natural efficiencies between the operations of the telephone network and the manufacture of equipment to be installed in that network. Allowing the BOCs to manufacture should promote jobs, stimulate R&D spending, contribute to our balance of trade, and help the United States to retain its position as the world leader in telecommunications technology. Because of the significant changes in the communications marketplace and in the regulatory arena, there is less likelihood that the BOCs could cause harm to the Nation's equipment marketplace through anticompetitive activities. Further, regulators are better equipped to prevent harm from occurring to ratepayers or to the competitiveness of the United

[79] The court found that 99.9 percent of telephone traffic, generated by one customer out of one million, is carried through non-telephone company facilities. 673 F. Supp. at 536.40.

States market, and several provisions in S. 1981 as reported should assist regulators in preventing and detecting such activity.

If the United States expects to compete worldwide, domestic communications policy will have to abandon its excessive preoccupation with the alleged misbehavior of a company that no longer exists and embrance a vision of the future benefits that the seven RBOCs could bring to the international communications equipment marketplace.

Legislative History

Senator Hollings, Chairman of the Committee, introduced S. 1981 on November 21, 1989. The Subcommittee on Communications held two hearings on the bill, on April 25 and May 9, 1990. Witnesses at these hearings included the Chairman of the FCC, several representatives of the BOCs and the telecommunications manufacturing industry, and representatives of the Communications Workers of America, the Consumer Federation of America, and the Arizona Council for the Hearing Impaired. The Commerce Committee ordered S. 1981 reported by voice vote with an amendment in the nature of a substitute at its executive session on May 22, 1990.

Summary of Major Provisions

The bill as reported adds a new section 225(a) to the Act that would permit the BOCs to manufacture telecommunications equipment and customer premises equipment and provide telecommunications equipment notwithstanding any previous antitrust restrictions. The section prohibits a BOC from manufacturing in conjunction with another BOC.

Subsection (b) requires that the BOC only conduct such manufacturing or provision of equipment through an affiliate that is separate from any BOC.

Subsection (c) includes a number of safeguards to protect against anticompetitive behavior, including:

—requiring the FCC to issue rules to ensure that the affiliate files financial information publicly;

—prohibiting a BOC from carrying out sales and other activities on behalf of its manufacturing affiliate;

—requiring that the affiliate shall conduct all of its manufacturing within the United States and that all component parts, of customer premises equipment manufactured by such affiliate or of telecommunications equipment manufactured by such affiliate, shall have been manufactured within the United States; except that the FCC may, no later than three months after application by such affiliate, waive these requirements upon a showing of extraordinary circumstances;

—requiring that the BOC own no more than 90 percent of the equity of its manufacturing affiliate;

—prohibiting the BOC from issuing debt to its manufacturing affiliate, and prohibiting any creditor of the manufacturing affiliate to have recourse to the assets of the BOC's telephone business; and

—requiring the manufacturing affiliate to make its equipment available to other local telephone companies.

Subsection (d) requires a BOC to file information concerning its network with the FCC at the same time that it makes such information available to its manufacturing affiliate. This subsection also requires a BOC to provide timely information to the public on the deployment of telecommunications equipment in its network.

Subsection (e) requires that the BOC's manufacturing affiliate and other manufacturers have a comparable opportunity to sell equipment to the BOC. This subsection also prohibits cross-subsidization.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, June 28, 1990.

Hon. ERNEST F. HOLLINGS,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has reviewed S. 1981, the Telecommunications Equipment Research and Manufacturing Competition Act of 1990, as ordered reported by the Senate Committee on Commerce, Science, and Transportation on May 22, 1990. We estimate that implementation of this bill would result in additional costs to the federal government of about $3 million annually in fiscal years 1991 through 1995, assuming appropriation of the necessary funds.

S. 1981 would permit the Bell Telephone Companies to research and manufacture telecommunications equipment through separate affiliates. The bill would require the Federal Communications Commission (FCC) to prescribe regulations governing varying aspects of the operations of manufacturing affiliates within 180 days of enactment. The FCC would be required to issue regulations concerning the relationship of the affiliates and the companies. The regulations would cover areas including accounting, financing, recordkeeping, and reporting. The FCC also would be required to issue regulations to ensure that manufacturing affiliates make their equipment available to local telephone exchange carriers and allow other manufacturers to sell equipment to the Bell Companies. Finally, the bill would require that manufacturing activity by affiliates be conducted within the United States. The FCC would be required to develop procedures to waive this requirement under certain circumstances.

Based on information from the FCC, CBO estimates that development and implementation of the various regulations and procedures required by the bill would result in costs of about $3 million a year over the next five years. Most of the costs would be for additional personnel to develop and implement the regulations. The FCC also would incur costs to revise its automated cost-accounting

system to monitor the financial relationships between companies and their affiliates.

No costs would be incurred by state or local governments as a result of enactment of this bill.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Laura Carter, who can be reached at 226–2860.

Sincerely,

ROBERT D. REISCHAUER, *Director.*

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

This legislation authorizes the BOCs to engage in the manufacture of telecommunications equipmnent and customer premises equipment, and the provision of telecommunications equipment. The bill would replace the current antitrust prohibition on BOC manufacturing with several regulatory safeguards designed to prevent the BOCs from engaging in anticompetitive behavior. The bill requires the FCC to develop regulations to enforce the provisions of the bill, so that the BOCs do not use their dominance over local telephone service to gain an unfair advantage over competitors in the equipment manufacturing marketplace. A representative of consumer groups also testified that permitting the BOCs to engage in manufacturing could cause local telephone rates to be higher than they otherwise would be because of the possibility of cross-subsidization. Regulatory provisions are necessary to ensure that the BOCs will not enter the manufacturing business at the expense of competition and telephone service ratepayers.

While these provisions will require some amount of increased regulatory activity by the FCC, it is important to note that any concern about these potential burdens must be balanced against the recognition that the bill allows the BOCs to enter a new line of business that was previously prohibited to them. The increase in productivity in the private sector that will result from the bill is sure to outweigh any increase in regulatory activity.

NUMBER OF PERSONS COVERED

Most of the bill's regulatory provisions concern the activities of the BOCs' telephone operations, not the activities of their manufacturing affiliates. The BOCs' telephone operations, and their employees, are already regulated by the various state commissions and the FCC. Thus, the regulatory provisions concerning the telephone operations are unlikely to increase the number of persons affected by regulation. Some provisions do concern the manufacturing affiliate, such as requiring the affiliate to make the equipment it manufactures available to other telephone companies, and requiring the affiliate to make public filings of its financial information. While the total number of persons affected by such regulations could be substantial if the BOCs' manufacturing affiliates become very successful, these regulations are unlikely to be overly burdensome.

ECONOMIC IMPACT

The economic impact of these regulations is likely to be minimal, especially considering the potential economic benefit that is likely to accrue from allowing the BOCs to enter the manufacturing arena. The BOCs' manufacturing arms would have the potential to stimulate jobs, investment, and export opportunities for the American economy. In addition to boosting overall economic output and productivity, these activities are likely to generate significant tax revenues for local, state and federal governments. Most of the regulatory provisions affect the activities of the telephone company's operations, which are already regulated, and are unlikely to impose much of an economic burden.

PRIVACY

The legislation will not have any adverse impact on the personal privacy of the individuals affected.

PAPERWORK

This bill requires the manufacturing affiliate of a BOC to make public filings of its financial information. The bill does not require the affiliate to generate new information but simply requires the public filing of information that it would collect in the regular course of business. The bill also requires the FCC to adopt rules to implement the provisions of the bill. Thus, the bill will increase the paperwork burden on the BOCs and other interested parties because they will file comments with the FCC concerning its proposed rules. The bill imposes no regular reporting requirements on any company other than the BOCs' manufacturing affiliates.

SECTION-BY-SECTION ANALYSIS

Section 1

Section 1 states that the short title of the bill is the "Telecommunications Equipment Research and Manufacturing Competition Act of 1990."

Section 2

Section 2 states the findings of the Congress that the economic growth and international competitiveness of the United States would be assisted by permitting the BOCs to engage in manufacturing and research regarding communications equipment.

Except as noted in the following discussion, the term "manufacturing" is intended to include the design, development, and fabrication of telecommunications equipment and customer premises equipment, as well as the provision of telecommunications equipment.

Section 3(a)

Section 3(a) adds a new section 225 to the Act that specifies the new activities in which the BOCs may engage. This section also sets forth the obligations and regulations that will govern their participation in these activities. The following describes the provisions of this new section 225 of the Act:

Section 225(a) permits a BOC, through an affiliate, to engage in the manufacture and provision of telecommunications equipment and the manufacture of customer premises equipment, notwithstanding any restriction contained in the MFJ. The provision does not grant the BOCs an exemption from future antitrust actions. The provision also states that the BOCs may not engage in manufacturing "in conjunction with" a BOC with which it is not affiliated. For instance, this provision would permit Illinois Bell to engage in joint manufacturing with Michigan Bell because they are both owned by Ameritech, but would not permit Illinois Bell to manufacture in conjunction with New York Telephone, which is owned by NYNEX. This provision is intended to bar any form of joint activity that might permit the BOCs to engage in anticompetitive behavior.

This provision is not intended to change the status of Bell Communications Research (Bellcore), i.e., make unlawful any activity that currently is lawful for Bellcore. Bellcore, which was created by the MFJ and is owned jointly and equally by the seven divested companies, provides a centralized organization for the provision of engineering, administrative and other services. One such service is providing a single point of contact for coordination of the BOCs to meet national security and emergency preparedness requirements. The Committee does not intend to disrupt Bellcore's current activities. Neither does the provision authorize Bellcore to do anything more than it is authorized to do today. For instance, the provision does not authorize Bellcore to engage in the manufacture or provision of telecommunications equipment or the manufacture of customer premises equipment, other than the limited amount that it was authorized to do prior to this bill.

Section 225(b) says that a BOC may only engage in the manufacture of telecommunications equipment and customer premises equipment and the provision of telecommunications equipment through an affiliate that is separate from the BOC. The manufacturing affiliate of a BOC may include a subsidiary of the BOC or a subsidiary of the RHC that owns or is owned by the BOC. This provision, for instance, does not require that each of the twenty-two BOCs establish its own separate affiliate: each of the seven RHCs may set up its own manufacturing affiliate or affiliates as long as those manufacturing affilates are separate from the BOC's telephone service operations. There is no limit to the number of manufacturing entities with which a BOC may affiliate, as long as they are all separate from the BOC's telephone service operations.

The intention of the word "separate" is to require enough distance between the manufacturing affiliate's operations and the BOC's telephone service operations to make it easier for regulators to detect cross-subsidization and anticompetitive behavior. Although other provisions of the bill specifically address certain activities concerning the separation between the manufacturing affiliate and the BOC's telephone service operations, these provisions establish the minimum requirements for such separation. The FCC may, after notice and comment, adopt rules that address issues not addressed in this bill and that require further separation if the FCC finds that such rules are necessary to protect against cross-subsidization and anticompetitive behavior. In determining such

rules, however, the FCC shall balance the need for these rules with the need to permit the BOCs to engage in close collaboration with any manufacturer, as set forth in section 225(f).

Section 225(c)(1) requires the manufacturing affiliate to maintain books, records, and accounts separate from its affiliated BOC. These materials must also identify all transactions between the manufacturing affiliate and the BOC. Even if the manufacturing affiliate is not a publicly held corporation, it must prepare financial statements which are in compliance with federal financial reporting requirements for publicly held corporations, file such statements with the Commission, and make such statements available for public inspection.

Section 225(c)(2) requires that a BOC and its non-manufacturing affiliates may not perform sales, advertising, installation, production or maintenance operations for a manufacturing affiliate. In other words, the manufacturing affiliate must conduct these activities on its own behalf, either with its own employees or using an agent that is independent of the affiliated BOC or its affiliates. The BOC and its manufacturing affiliates may carry out institutional advertising not related to specific telecommunications (or customer premises) equipment as long as the manufacturing affiliate pays its pro rata share of the costs of such advertising.

Section 225(c)(3) restricts the operations of the BOC's manufacturing affiliate in order to promote United States investment, employment and productivity. The provision states that the manufacturing affiliate shall conduct all of its manufacturing within the United States and all component parts, of customer premises equipment manufactured by such affiliate or of telecommunications equipment manufactured by such affiliate, shall have been manufactured within the United States. The provision also authorizes the FCC to waive these requirements, no later than three months after the affiliate submits an application requesting such a waiver, upon a showing of extraordinary circumstances.

The purpose of this provision is to ensure that the BOCs' manufacturing activities benefit the United States and not foreign countries. Over the past decade, several large manufacturers, including AT&T, have moved their manufacturing facilities outside the United States.[80] American manufacturers have also been increasing their use of foreign components in equipment that they fabricate.[81] Meanwhile, several foreign companies have been increasing their investments in the United States and increasing their share of the American market. In addition, in part because they are precluded currently from entering the manufacturing market, the BOCs have shown a proclivity toward investing their capital overseas. A recent New York Times article found that all seven of the BOCs had made significant investments in Europe.[82] Bellcore, the BOCs' joint manufacturing center, has also entered several joint

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[80] According to AT&T, AT&T now employs about 17,500 persons in manufacturing-related jobs outside the United States.

[81] Testimony at the hearings before the Communications Subcommittee indicated that 58 percent of the chips used in some AT&T circuit boards, for instance, are manufactured abroad.

[82] "The Baby Bells Scramble for Europe", *The New York Times*, December 10, 1989, Section 3 (Business Section), p. 1.

venture agreements with foreign-based manufacturers.[83] In 1987, NTIA determined that, if the manufacturing restriction is lifted,

> [T]here is a substantial concern [involving the United States trade position] in one situation. That situation would be if a Bell company undertook to manufacture digital central office switches in partnership with a foreign-based firm, and overseas markets (including the foreign partner's home market) remained closed to United States firms. It is our view that, absent appropriate safeguards, such joint venturing would likely cause significant harm to American competitive technology and trade positions, and could pose the threat of destroying this country's indigenous central office equipment manufacturing capacity.[84]

This pattern of activity is not in the long-run best interests of the United States. The movement of jobs to offshore locations will eventually cause the American workforce to lose the expertise to attract other manufacturing establishments. Increasing investment by foreign companies could cause United States technology and profits to be exported back to the home country of the foreign investor. If domestic companies focus too much on the possibilities of investment in foreign markets, the American economy will suffer from a lack of growth, especially in the latest technologies. These trends could lead to a serious decline in United States productivity, United States leadership in high technology industries, the availability of jobs, and the United States trade position.

As a result, the bill contains a provision to require the BOCs to conduct their manufacturing in a manner that will be sure to benefit the United States. The intention of this provision is to promote United States competitiveness by stimulating spending on R&D, encouraging job growth, permitting investment by United States companies in the United States, and giving firms the incentive to develop in-house technological expertise that will serve as the foundation for a productive economy. This is necessary to allow the United States to retain its leadership in the telecommunications industry.

On the other hand, this provision is not intended to be so restrictive that it prevents the BOCs from entering the manufacturing market at all. For this reason, a waiver provision is included for those extraordinary circumstances when such a waiver is required.

For purposes of this paragraph, the term "manufacturing" does not include "provisions of telecommunications equipment." This section is not intended to bar the BOCs from being able to sell telecommunications equipment abroad. In fact, it is hoped that the BOCs will produce goods that can be expected and can help to improve the United States balance of trade.

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[83] Sixteen of 34 joint venture research projects entered into by Bellcore over the past five years have been with foreign companies. In 1990 alone, Bellcore signed joint research projects with the Toshiba Corp. of Japan, the Furukawa Electric Co., Ltd. of Japan, the Industrial Technology Research Institute of Taiwan, and Siemens Aktiengesellschaft of West Germany. Notices filed in the Federal Register Pursuant to the National Cooperative Research Act of 1984; Department of Justice, Antitrust Division.

[84] "NTIA Trade Report: Assessing the Effects of Changing the AT&T Antitrust Consent Decree", U.S. Department of Commerce, February 4, 1987, p. vi.

Section 225(c)(4) requires that a BOC and it affiliates may own no more than 90 percent of the equity of any of its affiliated manufacturers. In other words, a BOC manufacturing affiliate cannot manufacture unless at least 10 percent of the equity of such affiliate is owned by a private entity or entities not affiliated with that BOC. Section 225(a) further prevents any other BOC, or any affiliate of any other BOC, from purchasing any equity interest in that manufacturing affiliate. The intention of this provision is to increase the oversight of the operations of the affiliate by outside parties. Independent manufacturers are most likely to be interested in making this equity investment so as to obtain shareholder and financial informaiton of the company. These outside entities can act as "private police officers" by scrutinizing the activities of the manufacturing affiliate and bringing any possible violations of the law to the attention of regulators. These outside investors can also exercise their rights as shareholders to bring suit against the directors of the corporation should they fail to fulfill their legal obligations.

Section 225(c)(5) recognizes that the manufacturing affiliate may choose to incur debt as part of its capitalization. This section provides that this debt may not be issued by any affiliate of the manufacturing affiliate, which includes any affiliate of the BOC with which it is affiliated. Also, any debt incurred by the manufacturing affiliate cannot permit a creditor, on default, to have recourse to the assets of the BOC's telephone service operations. The purpose of this provision is to protect the independence and viability of the BOC's basic telephone service in recognition of the vital service that these companies provide and the necessity to deep these companies solvent.

Section 225(c)(6) clarifies the separation requirement of section 225(b). This section makes it clear that section 225(b) only requires separation between a BOC and its manufacturing affiliate. It does not require separation between the manufacturing affiliate and any other affiliate of the BOC. For instance, the twenty-two divested companies have organized into seven holding companies. There is no requirement for separation between any non-BOC subsidiary or affiliate of the holding company and the manufacturing affiliate.

Section 225(c)(7) further clarifies that any BOC affiliate that becomes affiliated with a manufacturing entity itself becomes a manufacturing affiliate and must operate separately from the BOC and otherwise comply with the provisions of the bill.

Section 225(c)(8) requires BOC manufacturing affiliates to make available any telecommunications equipment they manufacture and offer to all local exchange carriers without unreasonable disscrimination or self-preference as to price, delivery, terms, or conditions. There are approximately 1400 carriers that provide local exchange telephone service in the United States. These carriers interconnect with each other and with interchange carriers to provide nationwide telephone service. The other 1400 local telephone companies need access to such telecommunications equipment in order to maintain high quality telephone service. High quality telecommunications service is particularly important in rural areas, often served by independent telephone companies, because of the need to stimulate jobs and economic growth in those regions. It is assumed that the BOCs will continue to manufacture equipment for which

there is reasonable demand from these other local telephone companies, taking into account the profitability of manufacturing the product, alternative sources of the product, the importance of the equipment to the local companies, the quantity demanded, the obsolescence of the product, and other appropriate factors. The telecommunications equipment that the BOCs must make available to other local telphone companies must be intended for use in the public telecommunications network (including for use with information services) and includes software that is part of such telecommunications equipment.

Some competition is developing in the provision of local telephone service in certain urban centers, particularly for large business customers in downtown metropolitan areas. This provision is not intended to obligate a BOC manufacturing affiliate to sell to companies providing directly competitive local exchange service within the BOC's service area.

The manufacturing affiliate's obligation to sell telecommunications equipment to an unaffiliated local telephone exchange is contingent upon two factors. Either the unaffiliated carrier is not affiliated with a telecommunications equipment manufacturer or if that carrier is so affiliated, the carrier must provide to the Bell Company the telecommunications equipment which its affiliate manufacturers for sale or commercial use without discrimination or self-preference as to price, delivery, terms for conditions.

Section 225(d) imposes certain information disclosure obligations on the BOCs. The BOC's telephone exchange service facilities are essential facilities for a wide variety of telecommunications products and services, including long distance services, cellular services, information services, customer premises equipment and telecommunications equipment. Those who interconnect with and those who manufacture equipment to operate with the local exchange network are dependent on the BOC for full and complete information about protocols and the technical requirements for such interconnection. To design customer premises equipment and telecommunications equipment, for instance, manufacturers of such equipment must understand what interfaces are available to interconnect their equipment to telephone exchange facilities.

In presenting the antitrust case against AT&T, DOJ made several allegations that AT&T had withheld critical information concerning the operation of the telephone network from outside equipment manufacturers in order to favor its affiliated manufacturing affiliate, Western Electric. Although the conditions of the market have changed substantially since that case was argued before the courts, some continue to assert that the BOCs would have the same ability and incentive to control their use of the information concerning their networks in order to favor their manufacturing affiliates.

To forestall such arguments, this provision requires a BOC to make publicly available the protocols and technical information concerning the operation of its network. The BOCs must report promptly to the FCC any material changes or proposed changes to such protocols and technical requirements, and the schedule for implementation of such changes or proposed changes. This provision is intended to cover all technical information necessary for the

interconnection of other services providers to the network as well as for the interconnection and use of customer premises equipment and telecommunications equipment with that network. It is also intended that the BOCs will reveal when and where such changes to the network will take place.

Under paragraph (2), the BOCs must reveal such information as early as possible, but at a minimum, no later than the same time that it makes such information available to any of its affiliates. The purpose of this requirement is to ensure that competitive manufacturers of CPE and telecommunications equipment have an opportunity to compete on an equal footing with the BOCs' manufacturing affiliates. Further, such information should not be limited solely to the minimum information necessary for interconnection of equipment available at that time. The BOCs should reveal protocols and technical information that may be useful for the design and development of new equipment that interconnects with that network, including both CPE and telecommunications equipment. For instance, a BOC should not be permitted to withhold information concerning the network from both its affiliate and unaffiliated manufacturers if such information could be useful to such unaffiliated manufacturers in designing new products or equipment that may contain advanced capabilities that would be of benefit to the public.

All regulated local exchange companies, including BOCs, are required under paragraph (3) to provide timely information concerning the deployment of telecommunications equipment in the network to other regulated carriers serving the same area of interest. For the purposes of this section, the term "area of interest" means a geographic area encompassing one or more franchise exchange areas serving common social, economic and other purposes related to the provision of telephone exchange service by local exchange carriers. The geographic areas and the number of franchise exchange areas covered by this term are not required to be uniform but may vary to meet differing conditions and requirements.

As with subsection (c)(8), this provision is not intended to extend to carriers that compete directly with the telephone companies in the provision of local telephone service. This requirement on the BOCs does not lessen their obligations under paragraph (1) to make available to everyone any material or proposed changes to the technical requirements of the network.

Finally, paragraph (4) recognizes the FCC's authority to prescribe such other regulations as may be necessary to ensure that manufacturers in competition with the BOCs' manufacturing affiliates have as ready and equal access to the information about the network that is necessary for such competition as do the manufacturing affiliates. The FCC, as it has in the past, should protect commercially sensitive information. The BOCs' manufacturing affiliates are entitled to earnings based on their intellectual property and to protect the proprietary nature of their commercially valuable information.

Subsection (e) also imposes obligations on the BOCs to protect competition and the ratepayer. Paragraph (1) requires that any Bell Company that has an affiliate that engages in manufacturing must provide to other manufacturers of telecommunications and

customer premises equipment opportunities to sell such equipment that are comparable to the opportunities it provides to its own manufacturing affiliate. "Comparable" as used in this section means that the BOC must seek out such technically suitable, available equipment of good value and benefit to the corporation regardless of source. The provision recognizes that it may be impossible to provide any two companies, affiliated or not, with "equal" opportunities to sell equipment. But the BOCs should strive to provide competitive manufacturers with opportunities that are as equal as possible to the opportunities they provide to their manufacturing affiliates.

Paragraph (2) requires the FCC to prescribe regulations requiring that any BOC with an affiliate that engages in any manufacturing authorized by section 225 (a) not subsidize that affiliate with revenues from the company's regulated telecommunications services. The Commission may take whatever action it considers appropriate to prevent such cross-subsidization, including regulatory measures that go beyond those contained explicitly in this bill.

Paragraph (3) requires the FCC to prescribe regulations requiring that a BOC that purchase equipment from its manufacturing affiliate authorized under section 225(a) only make such purchases at the open market price. The open market price of a product that incorporates sophisticated and rapidly changing technology generally reflects multiple product dimensions (e.g., product quality, specificity and compatibility of design, timely availability, specific technology, future product support and technology development). This provision is intended to protect against both anticompetitive self-dealing and cross-subsidization.

Section 225(f) permits the BOCs and their affiliates to work in close collaboration with any manufacturer of customer premises equipment or telecommunications equipment. During the hearings on the bill, the Committee heard several witnesses comment that the manufacturing line-of-business restriction prevents the BOCs from collaborating closely with manufacturers of customer premises and telecommunications equipment. The telephone network is extremely complicated and no individual or group of individuals can understand all of its technology, cost and customer perspectives. A collaborative effort is often useful to produce a successful product. Collaboration between manufacturers and network engineers and researchers can produce efficiencies that can lead to new products and innovative services. The inability to collaborate can cause delays and increased expense in the development of new customer premises and telecommunications equipment.[85]

The Committee intends to allow BOC personnel, personnel of its manufacturing affiliate, and any other affiliate, and any manufacturer to work together in the design and development of customer premises and telecommunications equipment, including hardware

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[85] One of the factors that helps explain the relatively poor American showing in manufacturing performance and technology is the link between production and research/development/design. Constant flows of people, information, and ideas between research and production is characteristic of Japanese firms. In American firms, the processes of research (or design) and production are more often sequential, with the results of development work handed over to a different set of people for management of production. There is must less interaction between the designers of the product and the production managers.

and software. Such collaboration, however, is not intended to override the separation requirement between the BOC and the manufacturing affiliate under subsection (b). Further, such collaboration is permitted only subject to the rights of unaffilated manufacturers to obtain access to all necessary technical information concerning the operation of the network at least as early as it is received by the BOC's manufacturing affiliates under subsection (d). Finally, such collaboration is not intended to permit Bellcore, the BOCs' jointly-owned reserach center, to collaborate with any manufacturer. Any manufacturing activity conducted by Bellcore, or collaboration with any other manufacturer, would be considered a violation of the prohibition in subsection (a) against a BOC engaging in manufacturing activity in conjunction with another BOC.

Section 225(g) simply authorizes the FCC to prescribe such additional rules and regulations as it determines necessary to carry out the provisions (and, impliedly, the purposes) of this section.

Section 225(h) simply recognizes that the FCC has the same authority over the BOCs and their manufacturing affiliates that it has in enforcing the Act with respect to any common carrier subject to the Act.

Section 225(i) requires the FCC to prescribe regulations to enforce this section within 6 months after the date of enactment of this section. The BOCs shall only be permitted to engage in the manufacturing authorized by subsection (a) after the regulations to enforce subsections (c), (d), and (e) are in effect.

Section 225(j) permits the BOCs to continue to engage in activities in which they were authorized to engage prior to the enactment of this bill. There are at least two categories of activities that fall under this "grandfather" clauses. The first concerns BOC activities outside the United States. The District Court has granted waivers permitting the BOCs and their affiliates to manufacture and provide telecommunications and customer premises equipment outside the United States. It should be noted that these waivers prohibit the BOCs from importing back to the United States the telecommunications and customer premises equipment that they manufacture outside the United States under the authority previously granted by the District Court. This bill does not alter or void such authority, but the Committee does not intend that the BOCs should be permitted to expend their overseas operations.

Subsection 225(k) contains several definitions. Among the most important are:

Paragraph (1) defines the term "affiliate" to mean any entity in which a BOC or any of its affiliates has any financial or management interest. This explicit reference to the BOCs creates an anomaly in section (c)(8)(A), where the term "manufacturing affiliate" is used to describe an affiliate of a non-BOC telephone company. In this case, the definition should not be read literally to concern only manufacturing affiliates of a non-BOC telephone company that are also affiliates of BOCs, but should instead refer to any manufacturing entities that are affiliated with the independent local telephone company.

Paragraph (2) refers to a BOC as including any successor or assign of a BOC Prior to divestiture, AT&T controlled and operated the Bell System's cellular businesses. At divestiture, AT&T trans-

ferred those businesses to the seven regional holding companies, not to the holding companies' Bell Telephone Companies. Therefore, the cellular businesses are not to be considered either successors or assigns of the Bell Telephone Companies for the purposes of this section. Such cellular companies are, of course, affiliates of the BOCs.

Paragraph (4) defines the term "manufacturing" as it is defined by the District Court in its decision interpreting the term as it is used in the MFJ. Such term includes the design and development of equipment, including software essential to the operations of that equipment.

Section 3(b)

Section 3(b) adds a conforming amendment to section 2(b) of the Act to recognize the FCC's authority to regulate the operations of the BOCs in relation to their manufacturing affiliates and the operations of the manufacturing affiliates themselves. This section is not intended to preempt the states' existing authority to regulate the operations of the BOCs or their manufacturing subsidiaries.

ADDITIONAL VIEWS OF SENATOR ALBERT GORE, JR.

I have generally supported the goals of S. 1981. It is time to reconsider the restrictions in the Modified Final Judgment (MFJ) which prevent the Bell operating companies (BOCs) from competing in the marketplace for telecommunications equipment in the U.S. and abroad. I have commended Chairman Hollings for his initiative in advancing this goal.

However, I am disturbed by language in the Committee report accompanying S. 1981 which could be harmful to a major manufacturer of telecommunications equipment in Tennessee.

Nashville-based Northern Telecom Inc. (NTI) is identified in the committee report as a "foreign" company. While it is true that NTI is a subsidiary of Northern Telecom Limited of Canada, I believe its impressive presence in the U.S. and its commitment to the U.S. economy distinguishes the company as an exceptional U.S. corporate citizen and deserving of different treatment in the report language.

NTI, headquartered in Nashville, was incorporated in 1972 in Delaware. The company employs approximately 22,000 people in the U.S. in 12 manufacturing plants, 13 research and development centers and in marketing, sales, and service offices across the country. It is the second largest manufacturer of telecommunications equipment in the U.S., supplying systems to business, universities, local, State and Federal governments, the telecommunications industry, and other institutions worldwide.

Northern Telecom's 1989 U.S. revenues were approximately $3.6 billion. Substantially all of those sales were of products and services manufactured in the U.S. NTI had a total of nearly $3.1 billion in assets in the U.S. in 1989, and the amount of goods and services purchased from U.S. suppliers was approximately $1.3 billion.

NTI has a sizable research and development program in the United States as well. Research and development is conducted at Northern Telecom locations in association with manufacturing operations, and in four laboratories in Atlanta, Dallas, Raleigh-Durham, and Mountain View, California.

Clearly, NTI has invested significant capital in the construction of U.S. manufacturing and R&D facilities. It has been responsible for significant U.S. job growth in the telecommunications industry. And, importantly, this investment has led to the development of high, value-added technology which will help provide the tools that our economy requires to be more competitive in the global marketplace.

Additionally, Northern Telecom is a major U.S. exporter of telecommunications equipment to Europe, the Pacific Rim, South America, and other regions throughout the world. In recognition of NTI's substantial contribution to U.S. exports, it received the President's E-Award.

While the fundamental objectives of S. 1981 do not penalize NTI's ability to continue its contribution to the U.S. telecommunications economy—and the U.S. economy as a whole—I believe that the Committee report should not single out NTI as a target for adverse interpretation of the bill's intent.

I hope to work with the Chairman to correct this flow in what is otherwise sound legislation.

MINORITY VIEWS OF SENATOR DANIEL K. INOUYE

For some twenty-five years, Chairman Hollings and I have served on the Commerce Committee. In that time, I can only count a few times that we have disagreed on a communications issue. I have learned that the Chairman is extremely knowledgeable about these matters and generally knows how to strike the proper balance. It is for that reason that I have had to think long and hard about opposing this legislation. At the end, however, I feel strongly that this legislation will not achieve its objective of increasing American competitiveness in the international telecommunications market. In fact, it will do just the opposite.

In Washington, we often believe history is what was on last night's news. I consider that unfortunate. We ignore important lessons and wind up repeating our mistakes. I am afraid that by reporting this legislation, this Committee has taken this near-sighted view of history and that we are setting in motion a cycle of conflict and uncertainty that will eventually lead back to the courts for resolution.

To comprehend the issue debated here, it is essential to remember a fundamental fact: the nation's local telephone companies are not like other businesses. Because they control essential telephone facilities and because they are rate regulated, they have incentives to act anticompetitively when they enter into unregulated lines of business. It is not that the people who work there are malevolent. I have found just the opposite to be the case. It is simply that these incentives cause them to use their undue market power to the detriment of competitors.

That is why the United States government has brought four antitrust actions against AT&T in the past seventy-five years.[1] Three of these actions resulted in AT&T divesting some of its operations. All of these actions resulted in AT&T or its progeny being prohibited from engaging in certain actions.

That is why companies and individuals filed dozens of private antitrust actions against AT&T during the years when newcomers were trying to enter into the telecommunications marketplace. These suits resulted in multimillion dollar awards.

With the most recent court action, we thought we had put most of these problems to rest. The source of this undue market power—the essential (bottleneck) local telephone facilities—were given to seven different companies (the Bell Operating Companies or BOCs) and these companies were forbidden to vertically integrate into cer-

[1] The first action resulted in the 1913 Kingsbury Commitment. AT&T agreed to sell its holdings in Western Union and to refrain from purchasing any local telephone company. The second action, in 1926, resulted in AT&T divesting its ownership of a nationwide radio programming network. The third action resulted in the 1956 Consent Decree, which in effect barred AT&T from offering data processing type services. The final action is the 1984 Modified Final Judgment.

tain businesses: the provision of long distance and information services and the manufacturing of telecommunications equipment. Without the threat of anticompetitive acts, firms in these three "forbidden" sectors have flourished. Their growth rates are stunning.[2]

We are now asked to undo this arrangement based on vague promises that regulators can do a better job and that these firms have some special ability that can improve our lot. Untested theories, unproven approaches, and unknown protections do not give me any solace. The result will almost certainly be that all of the benefits gained by the Modified Final Judgment—at a not insignificant cost—will be for naught.

Let me now turn to the specifics of this debate over the telecommunications manufacturing prohibition to further demonstrate my points.

The Modified Final Judgment

The last two antitrust actions brought by the U.S. government were founded on the same premise: the structure of AT&T was inherently anticompetitive. Firms providing long distance or information services required AT&T's local telephone facilities to complete their calls. Firms manufacturing telecommunications equipment could hardly stay in business if they could not sell to AT&T's local telephone companies. Yet, AT&T, with control of almost all of this country's local telephone facilities, too was engaged in providing long distance and information services and in manufacturing equipment. Not surprisingly, AT&T, the government argued, acted to favor its own enterprises, either by cross-subsidizing them from regulated telephone revenues or by discriminating against competitors. In other words, because it controlled "bottleneck" facilities, AT&T had both the incentive and ability to foreclose competition. As a result, it was virtually impossible to compete against AT&T and for the government's pro-competitive policy to be successful.

In the area of equipment manufacturing, the government alleged that AT&T acted to foreclose competition in several ways. First, AT&T gave to its manufacturing subsidiary, Western Electric, ready and immediate access to key engineering and technical information about the local telephone network. At the same time, this information was withheld from or not given as quickly to competitors. Without timely information, competitors found they were at a grave disadvantage in designing and manufacturing equipment for the local telephone companies.

Second, AT&T used revenues from regulated telephone services to subsidize the local company's purchase of equipment from Western Electric and the sale of Western provided customer premises equipment. More specifically, the government claimed that costs of equipment research, design, and development were allocated to design of the basic telephone network. Thus, competitors were harmed by facing products sold at below cost, and ratepayers were harmed since their revenues paid for this predatory conduct.

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[2] See the Testimony of Michael J. Circk, Vice-Chairman, Telecommunications Industry Association, Before the Subcommittee on Communications, May 9, 1990, pp. 1–6.

Third, even where competitiors produced a better product at cheaper rates, AT&T simply purchased from Western as a matter of practice. With the enormity of the Bell System and the relative lack of regulatory oversight, the odds of getting caught were slim.

The consequence of these practices was that the local Bell telephone companies purchased virtually all of their products from Western Electric, regardless of effectiveness, quality, or price. After all, how does a firm compete with a fully integrated monopolist that can merely turn to its subsidiary when it wants something? That is what the antitrust actions tried to remedy.

The obvious question at this point is: what happened to the regulators? Weren't they supposed to police these anticompetitive actions? To some extent, the regulators tried. The FCC conducted lengthy, but totally unsuccessful, proceedings into AT&T's manufacturing operations. State regulators only occasionally reviewed an equipment purchase by local telephone companies. Neither had direct jurisdiction over manufacturing operations, and neither spent much time in this area.

Despite the obvious lack of oversight of this area by regulators, AT&T argued at the beginning of the last antitrust case that regulatory oversight was so pervasive that the courts should not hear the case and should permit regulators to work their will. The court (Judge Waddy) soundly rejected this argument after a thorough review of the extent of the FCC's oversight of AT&T. The court concluded that the Commission failed to adequately oversee many AT&T activities, leaving more than ample room for anticompetitive conduct.[3]

The antitrust case thus continued. In early 1982, the Department of Justice and AT&T entered into a consent decree, which later became, after court review, the Modified Final Judgment (MFJ). The overall thrust of the MFJ was to separate competitive activities from those that would continue to be regulated monopolies. AT&T kept the former, and the newly created seven BOCs were given the latter along with conditions restricting them from certain activities.

THE TELECOMMUNICATIONS MANUFACTURING RESTRICTION

The MFJ prohibits the BOCs from manufacturing telecommunications equipment. The immediate question is: what is manufacturing? Does it involve only the fabrication of equipment, or does it extend to the design and development in conjunction with fabrication? The answer to these questions can be found in a 1987 decision of the court: the BOCs are barred "from the entire manufacturing process, including design, development, and fabrication." [4] The court went on the support this finding by stating:

> The decree was aimed at preventing in the future the anticompetitive practices in which the Bell System was assumed to

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[3] Judge Joseph C. Waddy, *Memorandum Opinion and Order on Jurisdictional Issues*, November 24, 1976, U.S. v. AT&T, CA No. 74-1698, 427 F. Supp. 57 (D.D.C., 1976); *AT&T v. U.S.*, AT&T, *Petition for Writ of Certiorari to the Unitd States District Court for the District of Columbia*, January 6, 1977. AT&T appealed this ruling, but both the Court of Appeals and the Supreme Court refused to overturn it.

[4] *United States v. Western Electric Co.*, Civil Action No. 82-0192, filed Dec. 3, 1987, U.S. District Court for the District of Columbia.

have been engaged in the past. Yet the Bell Systems' practices in the design and development were responsible for the section II(D)(2) restriction as much as, if not more than, its practices with regard to fabrication. In fact, virtually every "manufacturing episode" that was the subject of a pretrial charge by the government or that produced evidence at the trial, it was design and development manipulation that was the focus or the sole subject rather than discrimination with respect to fabrication.[5]

The scope of the manufacturing prohibition thus goes to the entire process. Yet, it is vital to this debate to understand that this does not mean that all the BOCs can do is issue generic requests and sit back to await the results. They can engage in a variety of manufacturing related activities, including close coordination with manufacturers to ensure that they obtain the necessary products. The following list provides a description of manufacturing activities within and outside the scope of the prohibition:

Manufacturing Activity	*Can BOCs Provide?*
Market Research	Yes
Product Conception—Generic Specifications and Functions of a Product.	Yes
Manufacturing Ownership	No
In House	
Acquisition	
Joint Venture	
Select Exclusive Manufacturer	Yes
Fund Manufacture Development	Yes
Engineering—Design of Product	No (but can work closely with manufacturer)
Manufacturing Prototype	No (but can work closely with manufacturer)
Sell Products They Develop:	
CPE	Yes
Network	No

Despite the rhetoric heard during the MFJ debate, the BOCs are able to work relatively closely with manufacturers in the design and development of products. For example, they meet regularly with equipment manufacturers through a group known as the Multi-Vendor Interaction program. Through Bellcore (the research and standards arm of the 7 BOCs), they have offices located at or near the plants of major switch manufacturers; and they regularly come to these plants to provide specifications for equipment and carry out tests. The Vice-President of Technology Systems for Bellcore demonstrated this close working relationship in a 1989 statement:

> Not only have we solved the immediate problems of divestiture, but we have, as an industry, moved well beyond our immediate post-divestiture circumstances. In particular, we have seen major progress toward the opening of the telecommunications marketplace through a free flow of information on architectures, requirements, and interfaces. The response has been an outpouring of products that Bellcore's clients [the BOCs] are

[5] Ibid. Pp. 17-18.

using to grow and evolve their networks, to provide existing services more economically than heretofore and to provide new services . . .

In January 1984, our supplier database contained 2000 companies; by January 1986, that number had grown to 4850, and now we have 9000 suppliers in our database and 50 shelf feet of supplier information in our library . . .

The two-day communications that has been established between Bellcore and the telecommunications supplier community is one of the successes of divestiture.[6]

All of this success is based on the fact that the BOCs cannot engage in manufacturing and thus have no reason to act anticompetitively. All of this success is in jeopardy if this manufacturing prohibition is lifted.[7]

Without having an in-house equipment manufacturer, the BOCs have embarked on a sophisticated strategy that meets their needs. They have used their enormous size and purchasing power to ensure they are not beholden to any single vendor. They have made sure that for each product equipment vendors compete to provide it. That way the BOCs obtain the best, most innovative equipment at the lowest price.

Moreover, over time, they have, in effect, forced vendors to tailor their products to specific BOC needs. For example, the BOCs had been concerned that the software in their switches was written in a way that required them to return to the vendors each time they wanted to change or create a service. Each such change may take up to a year or two. Because this delayed the provision of service, the BOCs met with the switch vendors and now the software is written in functions so that the BOCs can makes these changes themselves. It is thus incorrect to state that the BOCs cannot work closely with manufacturers or have no control over vendors. Their very size ensures they are assiduously courted by each vendor.

Despite this working relationship, the proponents of this legislation allege that the full competitive might of the BOCs could be used much more extensively to increase our economic strength. They further argue that the regulators can control any anticompetitive problems, despite the fact that the regulators have never been able to do so. They contend that regulators have new tools at their disposal. Since these safeguards are fundamental, they should be explored more fully. Once they are, it is again clear that they are not sufficient.

Safeguards

While the BOCs may argue that their bottleneck strength is rapidly eroding, no other party—not even among their supporters in the government—believes this to be the case.[8] There is no real dis-

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[6] Bellcore, *Digest of Technical Information*, January, 1989, pp. 1-4.

[7] For a more complete discussion of the interaction between the BOCs and equipment vendors, see the Testimony of Michael J. Birck, Vice-Chairman, Telecommunications Industry Association, Senate Subcommittee on Communications Hearings on S. 1981, May 9, 1990, pp. 14-19.

[8] See, for example, *The Geodesic Network, 1987 Report on Competition in the Telephone Industry*, Department of Justice (Peter Huber), Chapter 2.

pute that by permitting the BOCs to enter these restricted markets, they would have the same type of vertical monopoly structure that gave birth to the Justice Department suit against AT&T and many private anti-trust suits. This might also subject ratepayers to higher rates if adequate protections are not instituted. Are any remedies sufficient to protect against these antitrust concerns while permitting entry?

There are two general types of anticompetitive conduct by the BOCs that must be addressed. First, they may cross-subsidize these new ventures. It is likely that new ventures, especially those now restricted, would share corporate resources, both people and telephone plant, with local telephone operations. The costs of these resources may be capable of being allocated specifically to each activity, but in many cases they will not. There is then the potential for some of these shared costs to be picked-up in a greater proportion than proper by the ratepayer, giving rise to predatory pricing. For example, how should we allocate the costs of research that spawns innovations in both basic telephone and unregulated information services? What about administrative overhead, such as legal services? What about a telephone switch that provides various functions?

Second, the local telephone companies may give preferential treatment to their own ventures. Such preferences may take the form of advance notice of new products, services, or standards. It may involve use of existing customer information. Competitors may find themselves with a lesser grade of interconnection or with slower service. These and other types of preferences comprise a host of ways for competitors to be unfarily discrminated against.

CROSS-SUBSIDIZATION

In regard to the matter of cross-subsidization, the BOCs' claim that they can construct a proper scheme of accounting for these common costs such that the ratepayer would not be harmed. The FCC, after many years of examining this matter, has finally established rules for such an accounting scheme.[9] At the Committee's hearing, the Chairman of the FCC stated that these rules are in place and are working and that these rules require annual independent audits to ensure compliance with the rules. The true value of these rules, however, is very limited.

At the outset, it is questionable whether the FCC rules correctly allocate these common costs between regulated telephone operations and unregulated ventures. No one can deny that some of these allocation rules are arbitrary. Because they have been in place only a short time, no one can say with certainty whether they can work.

A GAO report of a few years ago questioned whether the Commission can ever implement an effective accounting scheme. This view is shared by almost all non-BOC entities. They argue that any allocation would be by its very nature arbitrary and that these accounts are too complex to track accurately, especially by the FCC

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[9] *Separation of Costs of Regulated Telephone Service from Costs to Nonregulated Activities*, CC Docket No. 86-111, Report and Order, FCC 86-564, released February 6, 1987.

with its limited resources. In any event, even if there is a successful accounting scheme, it does not address other financial aid the telephone parent can give the new venture. For example, the parent can guarantee debt acquired by the new venture. The parent also funds other key start-up costs. In each of these instances, ratepayers might well pick-up costs not attributable to local telephone service.

An elaborate description of the problems involved in detecting cross-subsidization was contained in a letter to the staff working on the 1987 Huber report on behalf of the Telecommunications Committee of the Western Conference of Public Service Commissions:

> The presence or extent of cross-subsidy is obscured by the following three phenomena: cost allocation factors, indirect subsidies, and the shifting of risk from competitive to monopoly ventures . . .
>
> . . . the nature of joint and common costs is such that they cannot be associated with particular services on the basis of cost causation. Coventional practice has used cost allocation factors in a fully distributed cost study to allocate joint and common costs to the various services. . . The absence of a consensus on these cost allocation factors precludes state commissions from having confidence that cross-subsidization has been effectively prevented.
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> . . . (Indirect subsidies occur) when an intangible asset is developed in the utility business—often at considerable expense to monopoly ratepowers—and the benefit of the intangible asset is effectively transferred to a non-utility line of business. This sort of transfer occurs when an affiliate is allowed access to the utility's pool of highly trained and experienced personnel, and when it is able to rely upon the utility's name and reputation of marketing information and usage patters—all with our proper compensation.
>
> . . . it may happen that competitive lines of business into which utilities diversify are inherently more risky than the franchised, monopoly utility operations. If that is the case, the diversified company's cost of capital will rise as a direct consequence of the diversification. If no adjustment is made, the utility subsidizes its affiliate by bearing a portion of the risk of the affiliate's line of business. Unfortunately, there is no consensus—either among regulators, utilities, or the professions—on methods for calculating the magnitude of this subsidy and removing its effect from the utility's proper share of aggregate costs.

There is then no reason to believe the FCC has finally crafted rules that properly allocate these common costs between regulated and unregulated activities so as to preclude cross-subsidization. But, even assumming they do, there are two additional significant weaknesses in relying on these rules. First, they do not apply to the states, which control most of the BOC costs. Second, they cannot be adequately enforced.

The FCC's common cost rules only apply to activities controlled by the Commission, that is activities over the facilities used for interstate telephone calls. But, about three-quarters of the facilities (and costs) of the telephone company are not used for interstate

calls. The states control activities over these facilities. The states, however, do not have to follow the FCC's rules; and few have comparable rules for the allocation of common costs. In addition to the lack of effective oversight in many states, because each BOC is in many states and because there is some flexibility in locating facilities and operations, they have some ability to avoid those few states with strict regulations.

While the FCC's independent audit requirement helps ensure that whatever is on the accounting ledgers complies with the common cost rules, it does little more. Some agency not only needs to check on the independent audits but has to look behind the ledgers. There are at least four reasons for more careful oversight: each BOC (1) adopts its own cost manual, (2) chooses its own cost allocation procedures, (3) selects its own auditors, and (4) uses its own reporting categories and terminology.The FCC has assured us they will carry out this task; however, so far, the FCC has not even released its assessment of the first round of independent audits on 1988 common cost allocations. In addition, the GAO recently indicated that the FCC has only enough resources to audit fully each major telephone company once every 16 years.

Both the FCC Chairman and the Chairman of Bell South claimed at the Committee's hearing that the GAO figure is misleading and they pointed to the success of the recent FCC audit of NYNEX Material Enterprises. They claim that a full audit is rarely required and that selective enforcement is effective.

There are two major problems with this interpretation. First, the actions of NYNEX occurred about five years ago, and it was not until a short time ago that the FCC ruled on this matter. While FCC enforcement after such a long time may make the ratepayer whole, it does nothing for competing equipment providers. There is no way to make up for lost sales, especially when competition is stiff and margins are slim. Slow enforcement for these competitors is tantamount to no enforcement.

Second, selective enforcement only works when the auditors know what area to target. How did this work with respect to the NYNEX audit? The FCC acted only after disclosures were made to the *Boston Globe*. So, the Commission was not in the posture of aggressively auditing or looking for problems. It was initially passive. As anyone knows, disclosures of the type of the NYNEX case are rate. It is at best misleading for the FCC to portray its policies as successful based on this case. It is more an example of regulation by good fortune. Hardly a policy for the long run.

The FCC Chairman and the BOCs have also argued that the regulators are turning away from rate of return regulation and changing to price based or incentive regulation and that this will lessen the opportunities for cross-subsidization. First of all, rate regulation will always serve as a basis for overseeing the regulated telephone companies. Even under the FCC's price cap approach, the BOCs will be regularly evaluated to determine whether their earnings are excessive. In addition, if the BOC ever find themselves underearning, they will seek changes in the regulations. This, in fact occurred recently in New York where New York Telephone sought changes in its incentive plan when it found it was underearning by hundreds of million dollars. Second, whether this incentive regula-

tion will be successful in lessening cross-subsidization depends entirely on how the plan is constructed. The FCC's proposal for the BOCs groups too many different services together and thus will provide little protection. At the state level, the approaches tried so far are either short-term contracts that can be changed or complete deregulation (thus no control) of certain service offerings.

The best way to sum up all of these problems with policing cross-subsidization is to turn to a recent statement by FCC Commissioner Barrett—the only Commissioner who has also been a state regulator: "I contend there's a distinct possibility that there's not a regulatory body in the country that would recognize a cross-subsidy if it smacked them in the face." [10] There is simply no reason to have any faith that regulators can solve this problem. They have never had this ability; they have not acted to change this fact.

DISCRIMINATION AND PREFERENTIAL TREATMENT

As for the matter of preferential treatment, the BOCs' claim that the FCC and state regulators can impose certain rules of conduct that will prevent such activities. The FCC, for example, has rules that require, the disclosure of network information and the protection of telephone customer information from improper release. These rules, however provide little solace for competitors; there continue to exist opportunities for preferential treatment that are too numerous for any regulatory body to police effectively.

At the outset, the supporters of this legislation argue that the world has changed: there are now seven companies instead of one, and the market is global, not domestic. These supporters then go on to argue that an equipment firm could not be successful selling just to itself and that this would aid detection. To begin with, there is a fundamental flaw in these arguments: the MFJ assumed this to be the case and still believed that the prohibitions on BOC activities were necessary even with the break-up of AT&T. That is because the MFJ is based on the BOCs' control of local exchange bottlenecks, and there is no doubt that the BOCs' control remains as great today.

While there are now seven companies, each company has a monopoly in their operating region (about 15 percent of the market). There is no question that this market power is sufficient to translate into total control over smaller equipment vendors. It will also translate into greatly increased leverage over even the largest vendors. In fact, the Department of Justice in its filing in the First Triennial Review of the MFJ admits that if the manufacturing retriction were lifted, each BOC could satisfy all or nearly all of its equipment needs from its own manufacturing affiliate.[11] The Huber Report for the Department (*The Geodesic Network, 1987 Report on Competition in the Telephone Industry*) estimates that in-house purchases by each BOC will foreclose anywhere from five to fifteen percent (and for some items as much as 20 percent) of the U.S. equipment market.[12] Under traditional antitrust analysis, se-

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[10] *Communications Daily*, March 5, 1990, p. 1.

[11] *Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment*, February 7, 1987, pp. 169–170.

[12] See Huber Report at 1.15, 14.8, and 14.13–14.

rious competitive concerns are raised when as low as seven or eight percent of a market is foreclosed as the result of leveraging by a regulated utility. Consequently, the BOCs even in this new incarnation continue to pose a substantial threat to competition if they become vertically integrated, and the facts demonstrate that this threat is not diminished by regulatory oversight.

For regulatory oversight of discrimination to be successful, there must be similar prices for similar products (the so-called benchmarks). It should be noted first that the FCC had benchmarks prior to divestiture—in companies like GTE and United—but was unable to police anticompetitive acts. Second, benchmarks only work if there are outside sales. However, there is no certainty this will occur to any great extent. In most sectors of the communications equipment market, sales to one BOC would be considered enough to ensure a firm's success. Third, the 1987 Huber Report concludes that telecommunications equipment prices for similar products can vary, sometimes greatly. For example, the Report found that prices for similar switches can vary by about 20 percent, "a competitively significant margin." [13]

Not only is it difficult to find similar prices, it is difficult to find similar products. Many telecommunications products behave more as "custom" items than as commodities. More importantly, even for products where price variations have not been great, the BOCs have an incentive to make every product into a "custom" product. This makes regulatory detection virtually impossible.

Even assuming that it is easy to find similar products with similar prices, FCC oversight will likely prove ineffective in policing discrimination. First, the Commission acts after the fact, after a BOC has not bought a product from a competitor. The competitor must first present a case to the Commission that he offered a similar quality product at rates, terms, and conditions that were at least as good. The Commission then must get a response from the BOC, and then investigate and weigh the evidence. In the early 1970s, a company, Datran, brought such a complaint to the FCC. Before the FCC could complete its years of investigation, Datran went bankrupt.

Every year, the BOCs enter into many thousands of equipment transactions. Even if a small percentage of these were taken to the FCC, the Commission would have to increase its resources many times over to be able to deal with them. The reality is such that these resources will simply not be expended and that effective enforcement will simply not occur.

Finally, while the FCC has adopted rules requiring disclosure of technical information, these rules make this information available only at the "make/buy" point, that is when the BOC makes the decison to procure the product.

However, prior to this point, there are extensive discussions about the technical makeup of the network. If the BOCs were permitted into equipment manufacturing, they would be part of these extensive discussions, giving them a head start over the competition.

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[13] *See* Huber Report at 14.18.

THE SEPARATE SUBSIDIARY SAFEGUARD IN S. 1981

To the Chairman's credit, he recognizes that the existing regulations are insufficient to control anticompetitive acts by the BOCs. His legislation proposes that these activities be carried out through separate subsidiaries with some outside financing. The value of these separate subsidiaries is that while they do not change incentives to act anticompetitively, they make these activities somewhat easier to detect.

There are two major problems with S. 1981's separate subsidiary approach. First, this approach was rejected by the antitrust experts in the AT&T case as insufficient. They recognized that such an approach continues to rely on regulatory oversight, and they had no indication that such oversight would ever be adequate. Second, the idea behind separate subsidiaries is to separate costs and activities as much as possible. S. 1981 begins down this road and then turns around to permit greater commingling by the parent and the offspring in order to gain the benefits sought by this legislation. By this maneuver, the ease of detection gained through separate subsidiaries is greatly diminished.

In sum, the safeguards relied upon in this legislation are chimerical. Ratepayers and competitors will have to return to the pre-MFJ days and continually go hat-in-hand to the regulators and ask for help. No one has come before us with good reason why regulators have all of a sudden gained the skills and the will necessary to do this job. Even the Chairman of the FCC appears unsure of the abilities of regulators. In his statement before the Committee, he states, "Finally, Mr. Chairman, we should bear in mind that, while S. 1981 would change limitations imposed under the 1982 antitrust exposure of Bell companies * * *" [14] Thus, the Chairman understands that regulation may not work and that the antitrust laws have an important role to play. Why then, don't we let them work? Why then, are we going down a road that will most likely lead back to where we already are?

THE PUTATIVE BENEFITS OF S. 1981

Even the proponents of this legislation are convinced that some measures must be enacted to prevent anticompetitive acts by the BOCs. These proponents argue that any problems with these safeguards are more than offset by the benefits that can come from BOC entry into equipment manufacturing. It is therefore important to examine these putative benefits. In the end, they are just as imaginary as the proposed safeguards.

To begin with, the BOCs have absolutely no expertise in equipment manufacturing. They have no idea what the manufacturing process entails. They have never designed, made, sold, and serviced a product (with the exception of selling and maintaining customer premises equipment). For them to gain this expertise would take far too long, especially in today's dynamic environment. It is therefore almost certain that they will enter through acquisition, merger, and joint venture.

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[14] Statement of Alfred C. Sikes, Chairman, FCC, before the Senate Subcommittee on Communications, hearing on S. 1981, May 9, 1990, p. 7.

Likely candidates for deals with the BOCs are foreign manufacturers, all of whom are eager to sell in the American market. S. 1981 correctly recognizes this threat, and the bill contains a domestic content provision. I commend the Chairman for including this provision. However, the BOCs have already tried to weaken it; and it is doubtful that the Administration can accept it. Since this provision is fundamental to the objectives of this bill being achieved, I am greatly concerned that we will move this bill forward assuming that this provision will remain—when in fact it is likely to vanish. If it does vanish, the effect of this bill will be to turn over our domestic manufacturing to foreign concerns. That would be a disaster.

Assuming the provision remains, what do the BOCs bring to the manufacturing market? First of all, the proponents argue that the BOCs will bring their technical expertise in transmission and networking and will be able to integrate this into the creation of new products. While there may be economies of scope in the operation of telephone networks and the creation of equipment, there is no evidence that they are so great that a vast amount of new and better products will be introduced more quickly. There is also no evidence that many of these economies are not already captured by the close working relationship of the BOCs and equipment vendors or that they could not be captured with just a few minor changes to the MFJ (that would not threaten renewed anticompetitive activity).

In addition, one man's economies are another man's cross-subsidies. Inherent in these ties between the regulated telephone activities and these new equipment activities is increased commingling and the blurring of lines. It was this very problem—that was unsolvable over 75 years of antitrust disputes with AT&T—that brought the equipment prohibition in the MFJ.

The proponents also argue that the BOCs bring money. They argue that our small, high-tech firms are going under because they cannot find capital and that the BOCs can fill this void. This "BOCs as bankers" argument is somewhat puzzling. First, the capital markets in the U.S. are generally thought to work efficiently. Money flows fairly easily and constantly. If for some reason these markets are not working properly, we should address them directly.

Second, the BOCs do not have unlimited capital; and if they have excessive amounts, the regulators should examine whether their returns from regulated telephone operations should be lowered. With their capital, the BOCs make decisions on what can give the highest return. Today, they are investing this capital in the telephone network and overseas. They are also increasing shareholder dividends. There is no inherent reason why they would all of a sudden decide to invest in small, high-tech companies.

Third, the BOCs can and do make investments in such companies and ventures. The MFJ only prohibits them from owning or having a direct or constructive equity interest. Nothing prohibits them from having some other financial interest in a company and recovering their cost plus a reasonable return.

The proponents of this legislation next argue that by removing this prohibition on manufacturing our telecommunication trade

balance will improve. First of all, the U.S. continues to run a trade surplus in the higher value, telephone network products. We run a trade deficit in the lower value, customer premises equipment, which is akin to consumer electronics products. The BOCs have stated that they do not intend to enter this lower end market.

The greater fear here is that the BOCs will further worsen our balance of trade. As stated above, this legislation is precariously balanced on the domestic content provision. If this provision is weakened or removed entirely, this fear is likely to become a reality as the BOCs venture with eager foreign partners.

The proponents next turn to research and development, claiming that by permitting the BOCs to manufacture the amounts expended here will increase dramatically. It must be noted that the amounts expended on R&D by domestic manufacturers have gone up steadily since divestiture. At that time, AT&T spent about $2 billion on R&D. Today, the divested AT&T alone spends well over $3 billion. To this amount, you need to add the amount expended by the other domestic manufacturers as well as the amount expended by the BOCs and Bellcore. The total amount expended for R&D today by all domestic firms is about twice that expended at the time of divestiture. Because BOC entry would almost certainly cut into sales by existing businesses, particularly AT&T, while BOC R&D might grow, R&D for other companies—now with lower sales—would fall. In fact, it may well have the result of causing severe problems for current R&D efforts, including those by Bell Labs.

Conclusion

The Chairman has often stated that there's no education in the second kick of a mule. That goes for the third and fourth kick as well; yet, we continue to show we have not learned our lesson. Given the opportunity to become vertically integrated, the BOCs will use their essential facilities to undermine the competition. We have seventy-five years of evidence to demonstrate this point.

The proponents argue that the world has changed—that in the global marketplace, we need the BOCs to use their strength to help us compete and that on balance the regulatory safeguards are sufficient. But, we have only vague promises of what the BOCs can bring to the marketplace. In contrast, we know that they will try to act to the detriment of ratepayers and competitors. The trust we put into the regulators to protect these parties is greatly misplaced. Not only have they not demonstrated they deserve our trust; but, as soon as we pass this legislation, the BOCs will be back before the regulators looking to ease existing requirements—and they will continue to press all of these regulators until this is accomplished.

No one wanted AT&T to be divested, but we let it happen, believing it would bring benefits to the public and our nation. We went through years of uncertainty and problems because of this decision. Now, we are seeing the benefits, and they are substantial. I have heard no cogent reason why this should all be undone.

MINORITY VIEWS OF SENATOR KERRY

I have read the views of Senator Inouye on S. 1981. I would like to associate myself with these minority views.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

COMMUNICATIONS ACT OF 1934

Title I of that Act

TITLE I—GENERAL PROVISIONS

SEC. 1. * * *

APPLICATION OF ACT

SEC. 2. (a) * * *

(b) Except as provided in [section 224] *sections 224 and 225* and subject to the provisions of section 301 and title VI, nothing in this Act shall be construed to apply or to give the Commission jurisdiction with respect to (1) charges, classifications, practices, services, facilities, or regulations for or in connection with intrastate communication service by wire or radio of any carrier, or (2) any carrier engaged in interstate or foreign communication solely through physical connection with the facilities of another carrier not directly or indirectly controlling or controlled by, or under direct or indirect common control with such carrier, or (3) any carrier engaged in interstate or foreign communication solely through connection by radio, or by wire and radio, with facilities, located in an adjoining State or in Canada or Mexico (where they adjoin the State in which the carrier is doing business), of another carrier not directly or indirectly controlling or controlled by, or under direct or indirect common control with such carrier, or (4) any carrier to which clause (2) or clause (3) would be applicable except for furnishing interstate mobile radio communication service or radio communication service to mobile stations on land vehicles in Canada or Mexico; except that sections 201 through 205 of this Act, both inclusive, shall, except as otherwise provided therein, apply to carriers described in clauses (2), (3), and (4).

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Title II of that Act

TITLE II—COMMON CARRIERS

SEC. 201-224. * * *

REGULATION OF MANUFACTURING BY BELL TELEPHONE COMPANIES

SEC. 225. (a) Subject to the requirements of this section and the regulations prescribed thereunder, a Bell Telephone Company, through an affiliate of that Company, notwithstanding any restriction or obligation imposed before the date of enactment of this section pursuant to the Modification of Final Judgment on the lines of business in which a Bell Telephone Company may engage, may manufacture and provide telecommunications equipment and manufacture customer premises equipment, except that neither a Bell Telephone Company nor any of its affiliates may engage in such manufacturing in conjunction with a Bell Telephone Company not so affiliated or any of its affiliates.

(b) Any manufacturing or provision authorized under subsection (a) shall be conducted only through an affiliate (hereafter in this section referred to as a "manufacturing affiliate") that is separate from any Bell Telephone Company.

(c) The Commission shall prescribe regulations to ensure that—

(1) such manufacturing affiliate shall maintain books, records, and accounts separate from its affiliated Bell Telephone Company which identify all transactions between the manufacturing affiliate and its affiliated Bell Telephone Company and, even if such manufacturing affiliate is not a publicly held corporation, prepare financial statements which are in compliance with Federal financial reporting requirements for publicly held corporations, file such statements with the Commission, and make such statements available for public inspection;

(2) consistent with the provisions of this section, neither a Bell Telephone Company nor any of its non-manufacturing affiliates shall perform sales, advertising, installation, production, or maintenance operations for a manufacturing affiliate; except that institutional advertising, of a type not related to specific telecommunications equipment, carried out by the Bell Telephone Company or its affiliates shall be permitted if each party pays its pro rata share.

(3) such manufacturing affiliate shall conduct all of its manufacturing within the United States and all component parts, of customer premises equipment manufactured by such affiliate or of telecommunications equipment manufactured by such affiliate, shall have been manufactured within the United States; except that the Commission may, no later than three months after application by such affiliate, waive the requirements of this paragraph upon a showing of extraordinary circumstances;

(4) no more than 90 percent of the equity of such manufacturing affiliate shall be owned by its affiliated Bell Telephone Company and any affiliates of that Bell Telephone Company;

(5) any debt incurred by such manufacturing affiliate may not be issued by its affiliates, and such manufacturing affiliate

shall be prohibited from incurring debt in a manner that would permit a creditor, on default, to have recourse to the assets of its affiliated Bell Telephone Company's telecommunications services business;

(6) such manufacturing affiliate shall not be required to operate separately from the other affiliates of its affiliated Bell Telephone Company;

(7) if an affiliate of a Bell Telephone Company becomes affiliated with a manufacturing entity, such affiliate shall be treated as a manufacturing affiliate of that Bell Telephone Company within the meaning of subsection (b) and shall comply with the requirements of this section; and

(8) such manufacturing affiliate shall make available, without discrimination or self-preference as to price, delivery, terms, or conditions, to all local telephone exchange carriers, for use with the public telecommunications network, any telecommunications equipment manufactured by such affiliate so long as each such purchasing carrier—

(A) does not either manufacture telecommunications equipment, or have a manufacturing affiliate which manufactures telecommunications equipment, or

(B) agrees to make available, to the Bell Telephone Company affiliated with such manufacturing affiliate or any of the other affiliates of such Company, any telecommunications equipment manufactured by such purchasing carrier or by any entity or organization with which such carrier is affiliated.

(d)(1) The Commission shall prescribe regulations to require that each Bell Telephone Company shall maintain and file with the Commission full and complete information with respect to the protocols and technical requirements for connection with the use of its telephone exchange service facilities. Such regulations shall require each such Company to report promptly to the Commission any material changes or proposed changes to such protocols and requirements, and the schedule for implementation of such changes or proposed changes.

(2) A Bell Telephone Company shall not disclose to any of its affiliates any information required to be filed under paragraph (1) before that information is so filed.

(3) When two or more carriers are providing regulated telephone exchange service in the same area of interest, each such carrier shall provide to other such carriers timely information on the deployment of telecommunications equipment.

(4) The Commission may prescribe such additional regulations under this subsection as may be necessary to ensure that manufacturers in competition with a Bell Telephone Company's manufacturing affiliate have ready and equal access to the information required for such competition that such Company makes available to its manufacturing affiliate.

(e) The Commission shall prescribe regulations requiring that any Bell Telephone Company which has an affiliate that engages in any manufacturing authorized by subsection (a) shall—

(1) provide, to other manufacturers of telecommunications equipment and customer premises equipment, opportunities to

sell such equipment to such Bell Telephone Company which are comparable to the opportunities which such Company provides to its affiliates;

(2) not subsidize its manufacturing affiliate with revenues from its regulated telecommunications services; and

(3) only purchase equipment from its manufacturing affiliate at the open market price.

(f) A Bell Telephone Company and its affiliates may engage in close collaboration with any manufacturer of customer premises equipment or telecommunications equipment during the design and development of hardware, software, or combinations thereof relating to such equipment.

(g) The Commission may prescribe such additional rules and regulations as the Commission determines necessary to carry out the provisions of this section.

(h) For the purposes of administering and enforcing the provisions of this section and the regulations prescribed thereunder, the Commission shall have the same authority, power, and functions with respect to any Bell Telephone Company as the Commission has in administering and enforcing the provisions of this title with respect to any common carrier subject to this Act.

(i) The authority of the Commission to prescribe regulations to carry out this section is effective on the date of enactment of this section. The Commission shall prescribe such regulations within 180 days after such date of enactment, and the authority to engage in the manufacturing authorized in subsection (a) shall not take effect until regulations prescribed by the Commission under subsections (c), (d), and (e) are in effect.

(j) Nothing in this section shall prohibit any Bell Telephone Company from engaging, directly or through any affiliate, in any manufacturing activity in which any Company or affiliate was authorized to engage on the date of enactment of this section.

(k) As used in this section:

(1) The term "affiliate" means any organization or entity that, directly or indirectly, owns of controls, is owned or controlled by, or is common ownership with a Bell Telephone Company. Such term includes any organization or entity in which a Bell Telephone Company or any of its affiliates has any financial or management interest.

(2) The term "Bell Telephone Company" means those companies listed in appendix A of the Modification of Final Judgment, and includes any successor or assign of any such company, but does not include any affiliate of any such company.

(3) The term "customer premises equipment" means equipment employed on the premises of a person (other than a carrier) to originate, route, or terminate telecommunications.

(4) The term "Manufacturing" has the same meaning as such term has in the Modification of Final Judgment as interpreted in United States v. Western Electric, Civil Action No. 82-0192 (United States District Court, District of Columbia) (filed December 3, 1987).

(5) The term " Modification of Final Judgment" means the decree entered August 24, 1982, in United States v. Western

Electric, Civil Action No. 82-0192 (United States District Court, District of Columbia).

(6) The term "telecommunications" means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received, by means of an electromagnetic transmission medium, including all instrumentalities, facilities, apparatus, and services (including the collection, storage, forwarding, switching, and delivery of such information) essential to such transmission.

(7) The term "telecommunications equipment" means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services.

(8) The term "telecommunications service" means the offering for hire of telecommunications facilities, or of telecommunications by means of such facilities.

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[ERRATA]

Calendar No. 675

101ST CONGRESS *2d Session*	SENATE	REPORT 101-355

TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING ACT OF 1990

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

together with

ADDITIONAL AND MINORITY VIEWS

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1981

JUNE 29, 1990.—Ordered to be printed

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ERRATA

TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING ACT OF 1990

The above referenced Senate Report (101-355) was inadvertently printed with an omission in paragraph 3 of page 53.

The corrected paragraph follows:

In sum, the safeguards relied upon in this legislation are chimerical. Ratepayers and competitors will have to return to the pre-MFJ days and continually go hat-in-hand to the regulators and ask for help. No one has come before us with good reason why regulators have all of a sudden gained the skills and the will necessary to do this job. Even the Chairman of the FCC appears unsure of the abilities of regulators. In his statement before the Committee, he states, "Finally, Mr. Chairman, we should bear in mind that, while S. 1981 would change limitations imposed under the 1982 AT&T consent decree, it would have no effect on the potential antitrust exposure of Bell companies * * *" [14] Thus, the Chairman understands that regulation may not work and that the antitrust laws have an important role to play. Why then, don't we let them work? Why then, are we going down a road that will most likely lead back to where we already are?